COMMONWEALTH OF PENNSYLVANIA.

Department of Agriculture.

BULLETIN No. 159.

TABULATED ANALYSES

OF

COMMERCIAL FERTILIZERS

FROM

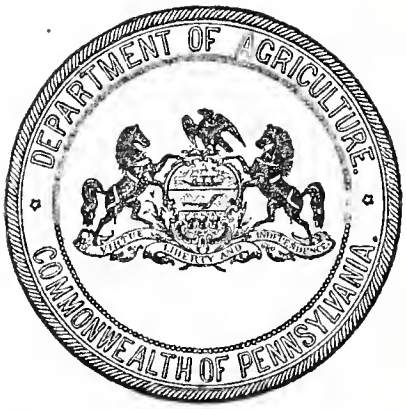
SAMPLES SELECTED IN ACCORDANCE WITH ACT OF MARCH 25, 1901,

BY THE

Pennsylvania Department of Agriculture,

FROM JANUARY 1, 1907, TO AUGUST 1, 1907.

HARRISBURG, PA.:
HARRISBURG PUBLISHING CO., STATE PRINTER.
1907.


DEPARTMENT OF AGRICULTURE
COMMONWEALTH OF PENNSYLVANIA

CONTENTS.

	Page.
Chemist's Letter of Transmittal,	7
Fertilizer Valuations, 1907,	9
Fertilizer Analyses, January 1 to August 1, 1907,	21
Percentage of Deficiency, 1902-1906,	24
Average Composition and Guaranty Compared,	25
Comparison of Selling Price and Valuation, 1902-1907,	26
Analyses of Complete Fertilizers,	28
Analyses of Rock and Potash Fertilizers,	50
Analyses of Dissolved Bone Fertilizers,	58
Analyses of Ground Bone Fertilizers,	60
Analyses of Acidulated Rock Phosphates,	64
Analyses of Miscellaneous Fertilizers,	68

AN ACT

To regulate the manufacture and sale of commercial fertilizers.

Section 1. Be it enacted, &c., That every package of commercial fertilizer sold, offered or exposed for sale, for manurial purposes, within this Commonwealth, shall have plainly stamped thereon the name of the manufacturer, the place of manufacture, the net weight of its contents, and an analysis stating the percentage therein contained of nitrogen in an available form, of potash soluble in water, of soluble and reverted phosphoric acid and of insoluble phosphoric acid: Provided, That any commercial fertilizer sold, offered, or exposed for sale, which shall contain none of the above named constituents shall be exempt from the provisions of this act.

Section 2. That every manufacturer or importer of commercial fertilizers as specified in section one of this act shall, on or before the first day of January next ensuing, or before offering them for sale in this Commonwealth, file annually with the Secretary of Agriculture an affidavit showing the amount of said fertilizer sold within the Commonwealth during the last preceding year; and if the said amount shall be one hundred tons or less, he shall pay to the Treasurer of the State the sum of fifteen dollars for each and every brand of such commercial fertilizer sold within the State during the last preceding year; and if the said amount shall exceed one hundred tons, and be less than five hundred tons, he or they shall pay the sum of twenty dollars, as aforesaid; and if the said amount shall be five hundred tons or more, he or they shall pay the sum of thirty dollars, as aforesaid. If such manufacturer or manufacturers, importer or importers, shall not have made any sales within the Commonwealth during the preceding year, he or they shall pay the sum of fifteen dollars, as aforesaid. Every said manufacturer shall, at the same time, file with the Secretary of Agriculture a copy of the analysis required by section one of this act, and shall then be entitled to receive from the Secretary of Agriculture a certificate showing that the provisions of this act have been complied with.

Section 3. The Secretary of Agriculture is hereby empowered to collect samples of commercial fertilizers, either in person or by his duly qualified agent or representative, and to have them analyzed, and to publish the results for the information of the public.

Section 4. The Secretary of Agriculture, and such assistants, agents, experts, chemists, detectives and counsel as he shall duly authorize for the purpose, shall have full access, ingress and egress to all places of business, factories, farms, buildings, carriages, cars

and vessels, used in the manufacture, transportation or sale of any commercial fertilizer. They shall also have power to open any package or vessel containing or supposed to contain any commercial fertilizer, and take therefrom samples for analysis upon tendering the value of said samples.

Section 5. Any person selling, offering, or exposing for sale, any commercial fertilizer without the analysis required by section one of this act, or with an analysis stating that it contains a larger percentage of any one or more of the above named constituents that is contained therein, or for the sale of which all the provisions of section two have not been complied with, shall be guilty of misdemeanor, and on conviction shall forfeit a sum not less than twenty-five and not exceeding one hundred dollars for the first offense, and not less than two hundred dollars for each subsequent offense. It shall be the duty of the Secretary of Agriculture to enforce the provisions of this act, and all penalties, costs and fines recovered shall be paid to him or his duly authorized agent, and by him be immediately paid into the State Treasury, to constitute a special fund to be used in accordance with the provisions of section six of this act.

Section 6. The money paid into the Treasury under the provisions of this act shall constitute a special fund, from which the cost of selecting samples, making analyses, and other expenses incident to the carrying into effect the provisions of this act, shall be paid: Provided, That the total amount thus expended shall in no case exceed the amount paid into the Treasury.

Section 7. The term "commercial fertilizers," as used in this act, shall be taken to mean any and every substance imported, manufactured, prepared or sold for fertilizing or manuring purposes, except barnyard manure, marl, lime and wood ashes, and not exempt by the provisions of section one of this act.

Section 8. This act shall go into effect on and after the thirty-first day of December, one thousand nine hundred and one. All acts or parts of acts inconsistent with this act are hereby repealed, except that existing laws are to continue in force until this act goes into effect.

Approved—The 25th day of March, A. D. 1901.

LETTER OF TRANSMITTAL.

State College, Centre County, Pa.,
August 12, 1907.

Hon. N. B. Critchfield, *Secretary of Agriculture, Harrisburg, Pa.:*

Dear Sir: I have the honor to transmit herewith my report upon the analysis of the samples of commercial fertilizer received from official sample agents during the spring season of 1907.

Very respectfully,
WM. FREAR.

FERTILIZER VALUATIONS—1907.

The object of an official valuation of commercial fertilizers is to enable the consumer to judge approximately whether he has been asked to pay for a given brand more than the fertilizing ingredients it contains and market conditions prevailing at the time would warrant. It is clear, therefore, that no attempt is made in this valuation to indicate whether the fertilizer valued possesses a greater or less crop-producing capacity than another fertilizer; but only whether it is higher priced than another of the same general composition.

For this purpose it must be so computed as to include all the elements entering into the cost of a fertilizer as it is delivered to the consumer. These elements may be conveniently grouped as follows:

1. The wholesale cost of the ingredients.

2. The jobbers' gross profit on the sale of the ingredients; this includes office expenses, advertising, losses, etc.; for the purpose of the present computation it may be assumed that the sum of this gross profit and the wholesale cost of the ingredients, is equivalent to the retail price of the single ingredients near the wholesale markets in ton lots of original packages for cash.

3. The expense and profit of mixing: This item applies only to complete fertilizers, rock and potash, and ammoniated rock; not to dissolved or ground bone, or to dissolved rock.

4. The expense and profit of bagging.

5. Agents' commission: This item includes not only the commission proper, but every advance in price due to the sale of the goods through an agent in small quantities on time, rather than directly to the consumer in ton lots for cash.

6. Freight from the wholesale market to the point of delivery.

The valuations for 1906 were based:

1. Upon the wholesale prices from September 1, 1905, to March 1, 1906. of the raw materials used in fertilizer manufacture, the quotations of the New York market being adopted for all materials except acidulated phosphate rock and ground bone.

2. Upon an allowance of 20 per cent. of the wholesale prices, above mentioned, to cover jobbers' profit.

By adding the 20 per cent. allowed for jobbers' gross profit to the wholesale price of the several raw materials, the retail price in original packages at the jobbers' warehouse is obtained.

Since the amount of the several valuable fertilizing constituents in the various raw materials is known, it is a simple matter to determine the corresponding retail value per pound of the valuable fertilizing constituents yielded by each raw material. A schedule of these pound values affords a convenient basis of computation of the

value per ton of various fertilizers, whose computation is ascertained by analysis.

The values assigned, for the present, to the other elements in the cost of the fertilizer at the point of delivery are:

3. For mixing, $1.00 per ton.

4. For bagging, $1.00 per ton, in all cases except those in which the article was sold in original packages; the cost of the package being, in such cases, included in the wholesale price.

5. For agents' commissions, 20 per cent. of the cost of the goods f. o. b. at the jobbers' or mixers' warehouse.

6. For freight, $2.00 per ton; the cost of the freight in lots of twelve tons or over, from the seaboard to Harrisburg, averaging $1.88 per ton.

The following valuation of dissolved South Carolina rock illustrates the method:

Phosphoric acid.	Per cent.	Weight per ton.	
Soluble,	11.50	230 lbs. at 3c.	$6 90
Reverted,	2.50	50 lbs. at 2½c.	1 25
Insoluble,	1.00	20 lbs. at 1½c.	30
Retail cash value of ingredients,			$8 45
Bagging,			1 00
Cash value of goods ready for shipment,			$9 45
Agents' commission, 20 per cent.,			1 89
Freight,			2 00
Commercial value per ton,			$13 34

It is not to be expected, of course, that the valuations thus computed will precisely represent the fair price to be charged for a brand in each locality and in every transaction. Market conditions, competition, distance from factory, all introduce minor variations. Nevertheless, to make the approximation reasonably close the average valuation of a given class of goods ought to agree closely with its ascertained average selling price. Whenever such an agreement is no longer obtained by the use of a schedule, it is evident that the schedule of retail values of the constituents, or the added allowances for mixing, etc., requires revision.

It is needful to note here another factor greatly affecting the practical accuracy of these approximations. Their computations would offer little difficulty and their usefulness be far greater, if, by the ordinary methods of analysis, the exact nature of the ingredients used to supply the several fertilizer constituents, were capable of certain determination. This, is, however, possible, to-day, to only a limited extent. The valuations are, therefore based on the assumption that the fertilizers are uniformly compounded from high qual-

ity ingredients, such as are commonly employed in the manufacture of fertilizers of the several classes. Consumers should carefully avoid the error of accepting such valuations as infallible; they are not designed to be used for close comparisons of single brands, but only to indicate whether the price asked for a fertilizer is abnormal, assuming good quality for the ingredients used. From this it is clear that, except as high freights may require, the selling price of a brand should not far exceed the valuation; but that a fertilizer may be made of inferior materials and yet have a high valuation.

The valuations used during 1905 were modified for use during 1906 in accordance with the changes in wholesale prices of fertilizing ingredients and to make the valuations more closely follow the selling price.

The following comparative statement shows the valuations and selling prices of the several classes of fertilizers during 1902 to 1906:

Fertilizers.	Number of samples.	Valuation.	Selling price.	Difference of valuation from selling price.
Spring, 1902.				
Complete,	289	25.33	24.10	1.23
Rock-and-potash,	66	15.05	16.45	—1.40
Dissolved bone,	2	17.35	16.50	.85
Ground bone,	26	26.80	28.52	—1.72
Dissolved rock,	59	13.49	13.73	—.24
Fall, 1902.				
Complete,	229	23.31	21.83	1.48
Rock-and-potash,	62	14.46	15.98	—1.52
Dissolved bone,	6	27.08	25.30	1.78
Ground bone,	27	27.51	28.09	—.58
Dissolved rock,	56	13.70	13.47	.23
Spring, 1903.				
Complete,	365	24.29	24.57	—.28
Rock-and-potash,	82	14.73	17.20	—2.47
Dissolved bone,	3	30.87	31.17	—.30
Ground bone,	27	27.25	28.67	—1.42
Dissolved rock,	56	13.34	15.13	—1.79
Fall, 1903.				
Complete,	264	22.77	21.98	.79
Rock-and-potash,	74	14.86	15.96	—1.10
Dissolved bone,	11	24.57	23.67	.90
Ground bone,	49	27.07	27.52	—.45
Dissolved rock,	60	13.12	14.64	—1.52
Spring, 1904.				
Complete,	349	25.07	24.28	.79
Rock-and-potash,	75	15.45	16.47	—1.02
Dissolved bone,	2	28.42	31.50	—3.08
Ground bone,	22	27.77	28.20	—.43
Dissolved rock,	41	14.06	14.59	—.53
Fall, 1904.				
Complete,	256	22.53	21.82	.71
Rock-and-potash,	68	14.92	15.89	—.97
Dissolved bone,	6	27.77	24.94	2.83
Ground bone,	38	27.97	27.02	.95
Dissolved rock,	45	14.09	13.89	.20
Spring, 1905.				
Complete,	374	25.60	24.63	.97
Rock-and-potash,	82	15.49	16.11	—.62
Dissolved bone,	3	22.70	23.83	—1.13
Ground bone,	27	26.72	29.08	—2.36
Dissolved rock,	47	13.86	13.64	.22

Fertilizers.	Number of samples.	Valuation.	Selling price.	Difference of valuation from selling price.
Fall, 1905.				
Complete,	285	22.35	21.39	.96
Rock-and-potash,	74	15.04	15.97	—.97
Dissolved bone,	6	25.85	24.78	1.11
Ground bone,	35	28.70	27.70	1.00
Dissolved rock,	49	13.51	14.21	1.30
Spring, 1906.				
Complete,	412	24.76	23.55	1.21
Rock-and-potash,	99	15.19	16.17	—.98
Dissolved bone,	4	22.65	24.40	—1.75
Ground bone,	34	28.23	29.02	—.79
Dissolved rock,	45	12.98	13.75	—.77
Fall, 1906.				
Complete,	266	22.99	21.87	1.12
Rock-and-potash,	71	15.06	15.76	—.70
Dissolved bone,	7	25.33	22.06	3.27
Ground bone,	34	29.12	27.80	1.32
Dissolved rock,	43	12.99	13.45	—.46

The following statement from the weekly reports of the Oil, Paint and Drug Reporter, of New York City, shows the average wholesale prices of fertilizer raw materials from September 1, 1905, to March 1, 1906, and from September 1, 1906, to March 1, 1907:

Wholesale Prices of Fertilizer Ingredients, New York, Oil, Paint and Drug Reporter.

Substance.	Amount priced.	Average price Sept. 1, 1905, to March, 1906.	Average price Sept. 1, 1906, to March, 1907.	Prices Sept. to March, 1906-7, in per cent. of prices 1905-6.
Sulphate of ammonia,	Cwt.,	3.1253	3.1152	99.7
Nitrate of soda,	Cwt.,	2.2278	2.5524	114.5
Dried blood, H. G.,	Unit (20 lbs.),	2.6538	2.7561	103.4
Concentrated tankage,	Unit (20 lbs),	2.2161	2.4463	110.3
Rough bone,	Ton,	15.96	15.50	97.1
Bone meal,	Ton,	22.57	23.00	101.9
Fish guano, dry,	Unit (20 lbs.),	*2.5536	*2.59	101.4
Fish guano, acid,	Unit (20 lbs.),	†2.331	†2.34	100
Refuse bone black, oil,	Ton,	14.00	14.00	100
Refuse bone black, sugar,	Ton,	18.00	18.00	100
Phosphate rock, Charleston,	Ton,	5.125	6.358	124.1
Phosphate rock, Tennessee,	Ton,	3.87	5.825	150.5
Acid phosphate,	Unit (20 lbs.),	.6375	.6375	100
Double manure salt,	Cwt.,	1.18	1.18	100
Sulphate of potash,	Cwt.,	2.20	2.20	100
Kainit,	Ton,	8.50	8.50	100
Muriate of potash,	Cwt.,	1.965	1.965	100
Sulphuric acid, 66 D. G. B.,	Cwt.,	1.20	1.25	104.2

*Bone phosphate of lime 10 cents per unit.
†Bone phosphate of lime 35 cents per unit.

In ammoniates, such as dried blood and fish guano, the unit is of ammonia, of which 82.35 per cent. is nitrogen; in acid phosphate, the unit is of phosphoric acid (phosphorus pentoxid).

Except in the case of sulphate of ammonia and rough bone, the prices of ammoniates have advanced, the increase being especially marked in case of nitrate of soda and concentrated tankage.

The following data are from the monthly reports of Thos. J. White & Co., fertilizer brokers, Baltimore, Md., giving wholesale quotations upon ammoniates, and confirm the figures previously given:

Wholesale Prices of Ammoniates: Reports of Thos. J. White & Co., Baltimore, Md.

	Prices September to March, 1905-6.	Prices September to March, 1906-7.
Sulphate of ammonia, per cwt.,	3.125	3.0775
Nitrate of soda,	2.203	2.502
Ground blood, f. o. b. Chicago, per unit of ammonia,	2.4883	2.5925
Concentrated tankage, f. o. b. Missouri River, per unit of ammonia,	2.2125	2.39
Unground tankage, 120 per cent. ammonia; 20 per cent. bone phosphate,	.....	†*2.30
Ground tankage, f. o. b. Chicago, per unit of ammonia:		
11 per cent. ammonia; 15 per cent. bone phosphate,	†2.312	†2.52
12 per cent. ammonia; 12 per cent. bone phosphate,	.....	2.525

*October quotations only.

†Bone phosphate of lime 10 cents.

The following summary is taken from the Oil, Paint and Drug Reporter:

Phosphates.—The demand for phosphates throughout the year was unusually active. Prices of phosphate rock showed sharp advances.

Closing prices for the year were as follows:

South Carolina rock, air dried, f. o. b. Ashley River, $6.00@$6.50; Florida land pebble, f. o. b. Port Tampa, $5.75@$6.00; Florida high grade, f. o. b. Florida or Georgia ports, $10.25@$10.50; Tennessee, Mt. Pleasant, domestic, per ton, 78 and 80 per cent., $6.00@$6.25; 75 per cent. guaranteed, $4.50@$4.75; 68 to 72 per cent., $3.50@$3.75.

Raw Materials of Acid Manufacture: Brimstone.—Conditions during the past year have changed. Domestic production having increased, local consumers are relying more on the domestic output. Prices continued steady at $22.12½@$22.50 until late in the fall, when there was an advance to $22.25@$22.50. The higher prices were brought about by a decrease in supplies at consuming points.

Pyrites.—The increase in the demand assumed such proportions that it exceeded the output. The prices quoted at the beginning of the year were 10 cents per unit for Spanish lump ore washed (48 to 52 per cent. sulphur) and 10½ cents for domestic furnace size ore averaging 45 per cent. sulphur, all f. o. b. shipping ports.

During the year prices advanced 1 cent per unit, with indications for further rise very promising.

Sulphuric Acid.—The demand for domestic consumption has been great. Sales at the close of the year were made on the basis of 1 cent and up for 66 degree, and $12.00 per ton and up for bulk 50 degree, depending upon the quality, terms of sale, etc.

According to the same authority, prices of acid phosphate remained firmer, quotations ranging from 60@67½c per unit, according to quantity and point of shipment. These prices show no change from the previous year, notwithstanding the advance in the price of the raw materials of acid phosphate manufacture.

Potash Salts.—The reports of the U. S. Bureau of Statistics show the following entries for consumption during the fiscal year 1905 and 1906:

	1905.	1906.
Muriate (pounds),	202,366,601	211,875,897
Kieserit, kainit, etc.,	240,789	379,220

This trade is so managed that by March nearly all wholesale deliveries of the year are contracted for. The prices for potashes as announced by the German Potash Syndicate on the basis of large lots sold through brokers and delivered at Boston, New York or Philadelphia, are shown in the following table. These prices show no change from last year:

Salt.	March, 1907.	After March, 1907.
Muriate, 80 per cent., per 100 pounds,	1.885	1.915
Sulphate, 48 per cent., per 100 pounds,	2.17	2.20
Double manure salt, 48-53 per cent., per 100 pounds,	1.135	1.165
Kainit, 12.4 per cent., actual potash, per ton,	8.25	8.50
Manure salt, 20 per cent. potash, per ton,	14.80	15.20

Composition of Raw Materials.—In order to form a correct idea of the cost per pound of the fertilizer constituents of these materials, it is needful to determine their composition or, in other words, the quantities of valuable constituents each contain. The following table shows the composition of the raw materials used in the manufacture of fertilizers. No analyses of these materials, with the exception of ground bone and dissolved rock, have been made in Pennsylvania. The figures in the following table include the averages of the results of analyses made in Connecticut, New Jersey and Massachusetts during the past year, except in the case of ground bone and dissolved rock phosphates, where Pennsylvania results alone are included.

Composition of Non-Acidulated Fertilizer Ingredients. (Per cent.)

	Number of samples analyzed.	Nitrogen.	Potash.	Total phosphoric acid.
Sulphate of ammonia,	2	20.42	.....	.....
Nitrate of soda,	21	15.44	.....	.....
Dried blood,	7	12.00	.....	.....
Ground bone,	68	3.30	.....	21.44
Tankage,	7	6.57	.....	13.52
Ground fish,	25	7.90	.....	7.15
Cotton seed meal,	93	6.60	1.90	3.15
Castor pomace,	7	4.97	1.00	1.90
Sulphate of potash, H. G.,	3	.....	49.90	.....
Muriate of potash,	12	.....	51.14	.....
Kainit,	2	.....	13.50	.....
Double sulphate of potash and magnesia,	7	.....	24.86	.....

Composition of Acidulated Fertilizer Ingredients. (Per cent.)

	Number of samples analyzed.	Total phosphoric acid.	Soluble phosphoric acid.	Reverted phosphoric acid.	Insoluble phosphoric acid.
Dissolved bone black,† ..	3	16.74	11.95	3.06	1.73
Dissolved bone,*	11	15.09	4.64	4.59	5.86
Dissolved rock phosphate,	88	15.19	8.97	4.52	1.70

†1905 figures.
*Also contains 1.90 per cent. nitrogen.

Cost per pound of Fertilizer Constituents.—With the composition of these raw materials and their price per ton, hundred weight, or other unit of measure as a bsais, the wholesale cost per pound of the valuable constituents can be readily calculated. In many cases the ammoniates are quoted "per unit of ammonia," the term unit being equivalent to per cent.; in goods sold by the ton of 2,000 lbs., the unit is equal to 20 lbs., and 20 lbs. of ammonia contain 16.47 lbs. of nitrogen.

In the case of refuse bone-black, unacidulated, the mean, 28.25 per cent. of phosphoric acid, is assumed to represent the average material on the market.

Phosphate rock is sold by the ton of 2,240 lbs., and on the basis of the bone phosphate of lime it contains, with drawbacks for injurious constituents. Bone-phosphate of lime contains 45.8 per cent. of phosphoric acid; therefore, each per cent. of bone phosphate in a long ton is equivalent to 22.4 lbs., and contains 10.26 lbs. of phosphoric acid.

In the wholesale trade, dried blood, azotine, concentrated tankage and hoof meals are usually sold on the basis of ammonia, disregarding the phosphoric acid present.

Insoluble phosphoric acid in dissolved rock is likewise omitted from consideration, contracts being based solely upon the "available" phosphoric acid; nor in rock phosphates is any claim made for the small quantities of nitrogen and potash they contain, nor in dissolved bone for the potash present.

Under these conditions, the wholesale cost per pound in New York of the valuable constituents of such materials as furnish but a single fertilizing element, these materials being assumed to be in the state of preparation and in the packing in which the manufacturer purchased them, are given in the following table; also a figure representing a fair retail price at the factory, the materials having undergone no change in treatment or packing and the allowance for expenses and profit in retailing being 20 per cent.

Wholesale Cost Per Pound of Fertilizer Constituents. (New York.)

I. Ingredients Supplying One Constituent.

Material.	Constituent valued.	Wholesale price—cents.	Wholesale price plus 20 per cent.
Sulphate of ammonia,	Nitrogen,	15.26	18.31
Nitrate of soda,	Nitrogen,	16.53	19.84
Dried blood, high grade,	Nitrogen,	16.73	20.08
Concentrated tankage,	Nitrogen,	14.51	17.41
Refuse bone black:			
Oil,	Phosphoric acid, total,	2.48	2.98
Sugar,	Phosphoric acid, total,	3.19	3.83
Phosphate rock:*			
Tennessee, 78 per cent.,	Phosphoric acid, total,	.73	.88
South Carolina, 60 per cent.,	Phosphoric acid, total,	1.16	1.39
Acid phosphate,	Phosphoric acid, available,	3.19	3.83
Double manure salts,	Potash,	4.38	5.26
Sulphate of potash,	Potash,	4.52	5.42
Muriate of potash,	Potash,	3.73	4.48
Kainit,	Potash,	2.97	3.56

*The prices of phosphate rock are f. o. b. at the respective points of shipment, not New York. The prices for potash are taken from the schedule of the syndicate. The prices for concentrated tankage are taken from the reports of Thos. J. White & Co., and those of the remainder from the Oil, Paint and Drug Reporter.

The quotations for bone are given without specific reference to quality, so that it is impossible from these data to fairly apportion their several wholesale values to the nitrogen and phosphoric acid contained in this material. As compared with tankage, the general tendency is to assign a higher commercial rating to the phosphoric acid in bone and to the nitrogen, a rating not very different from that given in tankage.

In previous years the value assigned to the nitrogen has been the same as that quoted on crushed tankage c. a. f. Baltimore.

Quotations for crushed tankage not being available at this time, the present value for nitrogen is based upon quotations for ground tankage, 11 per cent. ammonia, 15 per cent. bone phosphate, f. o. b. Chicago, which, according to the reports of Thos. J. White & Co., Baltimore, during September, 1906, to March, 1907, have been $2.52 per unit of ammonia.

During the three preceding years, quotations on crushed tankage, c. a. f. Baltimore, have been on an average 12.67 per cent. in advance of those on ground tankage, 11 and 15 f. o. b. Chicago. Increasing the price of ground tankage as quoted above by this percentage, we have $2.839 per unit of ammonia as the value assigned to the nitrogen in bone.

This is equivalent to $3.44 per unit of nitrogen. The average composition of the ground bone and bone meal samples analyzed last fall in Pennsylvania was: Phosphoric acid, 22.00 per cent.; nitrogen,

3.26 per cent. The prepared bone contains less fat and moisture, and often less nitrogen than the ordinary rough bone, but these differences tend, in a manner, to neutralize each other. Assuming for the rough bone quoted in the New York market the same composition as the bone meal sold in Pennsylvania, and for the value of the nitrogen $3.44 per unit, as previously stated, the values per pound of the several constituents would be:

Wholesale Cost per Pound of Fertilizer Constituents, New York.
II. Bone.

	Constituent valued.	Wholesale price—cents.	Wholesale price plus 20 per cent.—cents.
Rough bone,	Nitrogen,	17.20	20.64
	Phosphoric acid,	.98	1.18
Ground bone,	Nitrogen,	25.52	30.62
	Phosphoric acid,	1.45	1.74

Valuation in Neighboring States.

It is desirable, from all points of view, that the schedules of valuation throughout a district in which similar market conditions prevail, should differ as little as possible. It has been our practice in the past, to conform our schedule to that adopted after very careful cooperative study of market conditions for each year, by the New England States and New Jersey, except where the peculiar conditions of our markets have made the valuations diverge too largely from the actual selling prices, as in the case of ground bone and dissolved rock phosphates. The schedules for these States for 1905 and 1906 are as follows:

Trade Values Adopted by the New England States and New Jersey.

	Cents Per Pound.		Values in 1907 in per cent. of those of 1906.
	1906.	1907.	
Nitrogen:			
In ammonia salts,	17½	17½	100
In nitrates,	16½	18½	112.1
In dry and fine ground fish,	18½	20½	110.8
In meat blood and mixed fertilizers,	18½	20½	110.8
In fine ground bone and tankage,	18.0	20½	113.9
In coarse bone and tankage,	13.0	15	115.4
Phosphoric acid:			
Water soluble,	4½	5	111.1
Citrate soluble,	*4.0	4½	112.5
In cotton seed meal, castor pomace, fine ground fish and wood ashes,	4.0	4.0	100
In fine bone and tankage,	4.0	4.0	100
In coarse bone and tankage,	3.0	3.0	100
In mixed fertilizers, insoluble,	2.0	2.0	100
Potash:			
In forms free from muriate,	5.0	5.0	100
As muriate,	4¼	4¼	100

*Except in New Jersey, where owing to the legal requirements of methods which indicate a less quantity of citrate soluble than is obtained by use of the official method a valuation of 4½ cents per pound has been adopted.

These values show changes since March 1, 1906, corresponding quite closely to the main changes shown in wholesale market reports. In the case of bone and rock phosphate goods, the correspondence is not so readily apparent. It should be borne in mind that the New England Station's schedule is based not solely upon the wholesale quotations from September to March, but also upon contract prices and retail quotations during January and February.

As in preceding years, Pennsylvania retail selling prices for dissolved rock and ground bone bear no close correspondence to New York wholesale prices for these commodities. Independent valuations must therefore be made.

Respecting dissolved rocks, the computed commercial valuations of last year were, each season, lower on the average than the selling price. Meanwhile, though New York quotations for acid phosphate show, as yet, no change, the price of sulphur has slightly increased, that of pyrites more pronouncedly, and those of phosphate rocks, from 25 to 50 per cent. Labor costs have also increased. On these grounds, it has been decided to add one-half cent per pound to the values for water soluble and citrate soluble phosphoric acid, thus increasing the total valuation of the average dissolved rock by about $1.50. This increase corresponds to that made for phosphoric acid in complete fertilizers.

Respecting bone: The average commercial valuation for ground bone in 1906 corresponded quite well to the selling price. New York

wholesale quotations show no increase in rough bone prices. Tankage values for nitrogen have, however, markedly increased. This, together with the increased prices for nitrogen from other sources, will tend to cause a change in like direction in the value of bone nitrogen. For this reason, the values for nitrogen in fine and coarse bone and tankage have been somewhat increased.

Schedule of Values for Fertilizer Ingredients, 1907.

	Cents per Pound.
Nitrogen:	
In ammonia salts,	17½
In nitrates,	18½
In meat, dried blood and mixed fertilizers,	20½
In fine ground bone and tankage,	15
In coarse bone and tankage,	13
Phosphoric acid:	
Soluble in water, in bone fertilizers,	5
Soluble in water, in rock fertilizers,	3½
Soluble in ammonium citrate, in bone fertilizers,	4½
Soluble in ammonium citrate, in rock fertilizers,	3
Insoluble in ammonium citrate, in bone fertilizers,	2
Insoluble in ammonium citrate, in rock fertilizers,	1½
In fine bone, tankage and fish,	3
In coarse bone and tankage,	2½
In cotton seed meal, castor pomace and wood ashes,	4
Potash:	
In high grade sulphate or forms free from muriate,	5
As muriate,	4¼

Potash in excess of that equivalent to the chlorin present, will be valued as sulphate, and the remainder as muriate.

Nitrogen in mixed fertilizers will be valued as derived from the best sources of organic nitrogen, unless clear evidence to the contrary is obtained.

Phosphoric acid in mixed fertilizers is valued at bone phosphoric acid prices, unless clearly found to be derived from rock phosphate.

Bone is sifted into two grades of fineness: Fine, less than 1-50 inch in diameter; coarse, over 1-50 inch in diameter.

The result obtained by the use of this schedule does not cover the items of mixing, bagging, freight and agents' commission. To cover these, allowances are made as follows:

For freight, an allowance of $2.00 per ton on all fertilizers.

For bagging, an allowance of $1.00 per ton on all fertilizers, except when sold in original packages.

For mixing, an allowance of $1.00 per ton on complete fertilizers and rock-and-potash goods.

For agents' commission, an allowance of 20 per cent. is added to the cash value of the goods ready for shipment.

FERTILIZER ANALYSES JANUARY 1, TO AUGUST 1, 1907.

Since January 1, 1907, there have been received from authorized sampling agents fifteen hundred and ninety-nine fertilizer samples, of which six hundred and two were subjected to analysis, the remainder being rejected either because they represented brands analyzed last season, it being impracticable to analyze all brands received, or because they were regarded as not certainly representative of the brand whose name they bore. Preference is given to those which have not been so recently analyzed. In certain cases when two or more samples representing the same brand were received, equal portions from the several samples were united, and the composite sample was subjected to analysis.

The samples analyzed group themselves as follows: 424 complete fertilizers, furnishing phosphoric acid, potash and nitrogen; 6 dissolved bones, furnishing phosphoric acid and nitrogen; 103 rock-and-potash fertilizers, furnishing phosphoric acid and potash; 41 acidulated rock phosphates, furnishing phosphoric acid only; 27 ground bones, furnishing phosphoric acid and nitrogen, and one miscellaneous sample, which group includes substances not properly classified under the foregoing heads.

The determinations to which a complete fertilizer is subjected are as follows: (1) Moisture, useful for the comparison of analyses, for indication of dry condition and fitness for drilling, and also of the conditions under which the fertilizer was kept in the warehouse. (2) Phorphoric acid—total, that portion soluble in water, and of the residue, that portion not soluble in warm ammonia citrate solution (a solution supposed to represent the action of plant roots upon the fertilizer), which is assumed to have little immediate food value. By difference, it is easy to compute the so-called "reverted" acid, which is the portion insoluble in water but soluble in the citrate. The sum of the soluble and reverted is commonly called the "available" phorphoric acid. (3) Potash soluble in water—most of that present in green sand marl and crushed minerals, and even some of that present in vegetable materials such as cotton-seed meal, not being included because insoluble in water even after long boiling. (4) Nitrogen—This element is determined by a method which simply accounts for all present, without distinguishing between the quantities present in the several forms of ammonium salts, nitrates or organic matter. (5) Chlorin—this determination is made to afford a basis for estimating the proportion of the potash that is present as chlorid or muriate, the cheaper source. The computation is made

on the assumption that the chlorin present, unless in excess, has been introduced in the form of muriate of potash; but doubtless there are occasional exceptions to this rule. One part of chlorin combines with 1.326 parts of potash to form the pure muriate; knowing the chlorin, it is, therefore, easy to compute the potash equivalent thereto. (7) In the case of ground bone, the state of sub-division is determined by sifting through accurately made sieves; the cost of preparation and especially the promptness of action of bone in the soil depends very largely on the fineness of its particles the finer being much more quickly useful to the plant.

The law having required the manufacturer to guarantee the amount of certain valuable ingredients present in any brand he may put upon the market, chemical analysis is employed to verify the guaranties stamped upon the fertilizer sacks. It has, therefore, been deemed desirable in this report to enter the guaranty filed by the manufacturer in the office of the Secretary of Agriculture, in such connection with the analytical results that the two may be compared. An unfortunate practice has grown up among manufacturers of so wording the guaranty that it seems to declare the presence in the goods of an amount of a valuable constituent ranging from a certain minimum to a much higher maximum; thus, "Potash, 2 to 4 per cent." is a guaranty not infrequently given. In reality, the sole guaranty is for 2 per cent. The guaranteed amounts given for each brand in the following tables, are copied from the guaranties filed by the maker of the goods with the Secretary of Agriculture, the lowest figure given for any constitutent being considered to be the amount guaranteed. For compactness and because no essentially important fact is suppressed thereby, the guaranties for soluble and reverted phosphoric acid have not been given separately, but are combined into a single guaranty for available phosphoric acid; in cases where the maker's guaranty does not specifically mention available phosphoric acid, the sum of the lowest figures given by him for soluble and reverted phosphoric acid is used. The law of 1879 allowed the maker to express his guaranty for nitrogen either in terms of that element or in terms of the ammonia equivalent thereto; since ammonia is composed of three parts of hydrogen and fourteen parts of nitrogen, it is a very simple matter to calculate the amount of one, when the amount of the other is given; the amount of nitrogen multiplied by 1.214 will give the corresponding amount of ammonia, and the amount of ammonia multiplied by 0.824 will give the corresponding amount of nitrogen. In these tables, the expression is in terms of nitrogen.

The law of 1901 abolishes this alternative and requires that the guaranty shall be given in terms of nitrogen. Many manufacturers

after complying with the terms of the law, insert additional items in their guaranties, often with the result of misleading or confusing the buyer; the latter will do well to give heed to those items only that are given as the law requires and that are presented in these tables.

A summary of the analyses made this season may be presented as follows:

Summary of Analyses Made This Season.

	Complete fertilizers.	Rock and potash.	Dissolved bone.	Dissolved rock.	Ground bone.
Number of analyses,	424	103	6	41	27
Moisture, per cent.,	9.57	10.54	8.54	9.95	5.28
Phosphoric acid:					
Total, per cent.,	9.92	11.44	14.68	15.41	21.43
Soluble, per cent.,	4.32	5.59	5.46	9.14	.....
Reverted, per cent.,	3.83	4.54	5.97	4.66	.....
Insoluble, per cent.,	1.77	1.31	3.25	1.61	.....
Potash, per cent.,	4.53	3.55	.....	.....	.....
Nitrogen, per cent.,	1.57	.....	1.45	.....	3.35
Mechanical analyses of bone:					
Fine,	.....	.....	.....	.....	75
Coarse,	.....	.....	.....	.....	25
Commercial valuation,	26.83	16.50	25.68	14.82	29.64
Average selling price,	24.60	16.94	22.28	14.04	31.55
Commercial value of samples where selling price is ascertained,	26.84	16.53	25.08	14.72	29.64

The cases of departure of goods from their guaranteed composition observed this season, including only those cases in which it amounted to two-tenths per cent. or more, were as follows:

Summary of Instances of Deficiency From Guaranty.

	Complete fertilizers.	Rock and potash.	Dissolved bone.	Dissolved rock.	Ground bone.
Deficient in four constituents,	3	.....	.....	.....	.....
Deficient in three constituents,	12	4	.....	.....	.....
Deficient in two constituents,	41	14	.....	1	.....
Deficient in our constituent,	111	27	1	7	5
Total number of samples in which deficiencies occur,	167	45	1	8	5

The cases of deficiency noted during the past ten seasons in goods as compared with their guaranties expressed in percentage of the total number of goods of each class analyzed, are as follows:

Percentage of Deficiency 1902-1906.

	Fall, 1902.	Spring, 1903.	Fall, 1903.	Spring, 1904.	Fall, 1904.	Spring, 1905.	Fall, 1905.	Spring, 1906.	Fall, 1906.	Spring, 1907.
Complete fertilizers,..	36.7	37.5	37.9	39.5	49.2	35 3	37.5	45.4	39.5	39.4
Dissolved bone, ...	50.0	33.3	63.6	*	50.0	†100.0	66.6	50.0	28.5	16.6
Rock and potash, ...	43.5	32.9	43.2	56.7	35.3	30.9	55.0	42.4	40.0	43.7
Dissolved rock, ...	8.9	23.2	20.0	20.0	11.1	9.3	10.0	28.8	25.6	19.5
Ground bone, ...	25.0	33.3	.....	36.3	56.8	40.0	31.4	49.0	14.7	18.5
All classes except miscellaneous, ...	33.2	35.1	44.7	39.6	41.4	32.8	31.4	43.8	35.8	36.1

*Only two samples analyzed for which no guarantees are reported.
†Only two samples analyzed for which guarantees are recorded.

A comparison of the average composition of all samples of complete fertilizers for which guaranties are recorded with the average of the corresponding guaranties, for several seasons past including those of this season follows:

Average Composition and Guaranty Compared.

	Average composition. Per cent.	Average guaranty. Per cent.
Fall, 1902.		
Phosphoric acid:		
Total,	12.58	11.40
Available,	9.95	9.29
Potash,	2.69	2.60
Nitrogen,	1.57	1.55
Spring, 1903.		
Phosphoric acid:		
Total,	11.90	10.67
Available,	9.36	8.73
Potash,	3.85	3.63
Nitrogen,	1.58	1.61
Fall, 1903.		
Phosphoric acid:		
Total,	10.76	9.65
Available,	8.84	8.13
Potash,	4.09	3.90
Nitrogen,	1.33	1.29
Spring, 1904.		
Phosphoric acid:		
Total,	10.24	9.32
Available,	8.27	7.87
Potash,	4.09	3.90
Nitrogen,	1.58	1.55
Fall, 1904.		
Phosphoric acid:		
Total,	10.49	9.72
Available,	8.59	7.70
Potash,	2.87	2.81
Nitrogen,	1.25	1.29
Spring, 1905.		
Phosphoric acid:		
Total,	10.16	9.42
Available,	8.50	7.92
Potash,	4.55	4.22
Nitrogen,	1.61	1.58
Fall, 1905.		
Phosphoric acid:		
Total,	10.63	9.62
Available,	8.72	8.13
Potash,	2.90	2.42
Nitrogen,	1.26	1.20
Spring, 1906.		
Phosphoric acid:		
Total,	9.73	9.21
Available,	7.88	7.77
Potash,	4.21	3.95
Nitrogen,	1.57	1.53
Fall, 1906.		
Phosphoric acid:		
Total,	10.45	9.70
Available,	8.23	8.16
Potash,	3.12	2.95
Nitrogen,	1.32	1.31
Spring, 1907.		
Phosphoric acid:		
Total,	9.21	8.50
Available,	8.13	7.83
Potash,	4.55	4.31
Nitrogen,	1.52	1.47

It is of interest to note how closely the series of valuations, based upon the wholesale prices of raw materials in the principal markets during the most important buying season and upon certain average allowances for expenses and profits on the part of the mixer and jobber, coincides with the retail prices later ascertained. A comparison for several seasons past is given below:

Comparison of Selling Price and Valuation, 1902-1907.

	Selling price.	Valuation.	Excess of valuation over selling price.
Complete fertilizers:			
1902, Spring,	24.10	25.33	1.25
Fall,	21.83	23.31	1.48
1903, Spring,	24.57	24.15	—.42
Fall,	21.98	22.77	.79
1904, Spring,	24.28	24.99	.71
Fall,	21.82	22.53	.71
1905, Spring,	24.63	25.60	.97
Fall,	21.39	22.35	.96
1906, Spring,	23.55	24.76	1.21
Fall,	21.87	22.99	1.12
1907, Spring,	24.60	26.84	2.24
Dissolved bone:			
1902, Spring,	16.50	17.35	.85
Fall,	25.30	27.08	1.78
1903, Spring,	31.17	30.87	—.30
Fall,	23.67	24.57	.90
1904, Spring,	31.50	28.42	—3.08
Fall,	24.94	27.77	2.83
1905, Spring,	23.83	22.70	—1.13
Fall,	24.78	25.85	1.11
1906, Spring,	24.40	22.65	—1.75
Fall,	22.06	25.33	3.27
1907, Spring,	22.28	25.08	2.80
Rock and potash:			
1902, Spring,	16.45	15.06	—1.40
Fall,	15.97	14.46	—1.51
1903, Spring,	17.20	14.74	—2.46
Fall,	15.96	14.86	—1.10
1904, Spring,	16.47	15.46	—1.01
Fall,	15.89	14.92	—.97
1905, Spring,	16.11	15.49	—.62
Fall,	15.97	15.04	—.97
1906, Spring,	16.17	15.19	—.98
Fall,	15.76	15.06	—.70
1907, Spring,	16.94	16.53	—.41
Dissolved rock:			
1902, Spring,	13.73	13.49	—.24
Fall,	13.54	13.70	.12
1903, Spring,	15.13	13.34	—1.79
Fall,	14.64	13.12	—1.52
1904, Spring,	14.59	14.05	—.54
Fall,	13.89	14.09	.20
1905, Spring,	13.64	13.86	.22
Fall,	12.21	13.51	1.30
1906, Spring,	13.75	12.98	—.77
Fall,	13.45	12.99	—.46
1907, Spring,	14.04	14.72	.68
Ground bone:			
1902, Spring,	28.52	26.80	—1.72
Fall,	28.09	27.51	—.58
1903, Spring,	28.67	27.25	—1.42
Fall,	27.52	27.07	—.45
1904, Spring,	28.20	27.70	—.50
Fall,	27.02	27.97	.95
1905, Spring,	29.08	26.72	—2.36
Fall,	27.70	28.70	1.00
1906, Spring,	29.02	28.23	—.79
Fall,	27.80	29.12	1.32
1907, Spring,	31.55	29.64	—1.91

From this comparison, it appears that the valuation of complete fertilizers, made upon the same principles that have been accepted for years, give an average result $2.24 in excess of the actual retail selling prices, although no special allowance had been made for the increased cost of labor and materials involved in mixing and bagging. It is obvious that either the wholesale quotations represent less closely than usual the average wholesale transaction of the past season, or that manufacturers have retailed during the past season on a narrower than usual margin of profit, expressed in percentage of the wholesale cost of raw materials and of manufacture.

The same divergance appears in the valuation of the few samples of dissolved bone represented in the analyses.

In the case of rock-and-potash and dissolved rock, the valuations correspond more closely with the selling prices.

The bone valuations are $1.91 less than the average selling price, so that the nitrogen valuation may not have been sufficiently raised to represent market conditions.

The work of the past season was allotted as follows: Reception and custody of samples, supervision of computations, M. S. McDowell; determination of total phosphoric acid, A. W. Broomell; of soluble and reverted phosphoric acid, J. W. White, assisted by H. D. Edmiston; potash, G. C. Given; nitrogen, A. R. Mertz; computer, Miss Alice Jones.

In the following tables are presented the results of analyses made of the several samples, single or composite, received from the official sampling agents during this season, except a few withheld from publication by direction of the Secretary of Agriculture because they represent goods concerning whose brand name there is some disagreement between the manufacturer's statement filed with the Department of Agriculture and the reports of sampling agents, or with respect to which the information is incomplete in some other important particulars. It is deemed best not to delay the publication of this bulletin until the information upon the points in question has been secured, but it is expected that the facts will have been ascertained with sufficient exactness to warrant the publication of these analyses in the fall bulletin.

COMPLETE

Furnishing Phosphoric Acid,

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.
	American Agricultural Chemical Company, New York.		
441	Dead Shot Phosphate,	B. F. Horting, Newport,	9.55
1478	High Grade Tobacco Manure,	John Greenleaf, Fairmont,	7.16
76	Special Potash Mixture,	The Beaver Hardware Co., Beaver,	12.30
385	Special Potash Mixture,	David G. Miller, Sinking Spring,	11.65
285	Standard "A" Fertillzer,	Lewis Kline, Pennsburg,	9.00
51	Ten Per cent. Potash Mixture for Potatoes,	J. 1. Goss, Lewistown,	9.79
74	Bradley's Bean and Potato Phosphate,	The Beaver Hardware Co., Beaver,	11.83
73	Bradley's Dissolved Bone and Potash,	The Beaver Hardware Co., Beaver,	11.74
415	Bradley's Niagara Phosphate,	Joseph Rhoads, Somerset,	10.54
425	Canton Chemical Baker's Standard H. G. Guano.	J. D. Miller, Rockwood,	9.18
65	Canton Chemical Baker's Special Wheat, Corn and Grass Mixture.	W. B. Winnie, Middleburg,	12.04
66	Canton Chemical Eagle Phosphate,	W. B. Winnie, Middleburg,	10.48
133	Canton Chemical Co. Potato Manure,	H. T. Hunsicker, Iron Bridge,	9.20
134	Canton Chemical Co. Resurgam Guano,	H. T. Hunsicker, Iron Bridge,	9.34
423	Canton Chemical Special Wheat and Corn Mixture.	J. D. Miller, Rockwood,	9.78
165	Clark's Cove Defiance Fertillzer,	John H. Noy, Coleman,	11.85
166	Clark's Cove King Philip Alkaline Guano,	John H. Noy, Coleman,	11.36
736	Detrick's Imperial Compound,	J. S. Jobst, Emaus,	10.91
322	Detrick's Quick Step Bone Phosphate for Potatoes and Tobacco.	Newton Goudor, Boswell,	12.38
324	Detrick's Standard Potash Fertilizer,	Levi Berkey, Somerset,	8.30
383	Great Eastern English Wheat Grower,	Geo. W. Freyberger, Oley,	10.60
382	Great Eastern General,	Geo. W. Freyberger, Oley,	9.87
275	Maryland Ammoniated Bone,	A. S. Rosenberg, Hatfield,	11.43
1070	Maryland Special Compound for Potatoes and Tobacco.	B. F. Shawn & Co., Butler,	11.68
168	Milsom's Buffalo Guano,	John H. Noy, Coleman,	11.59
576	Milsom's Erie King Fer. 1-7-1,	1. W. Gibson, Indiana,	10.57
280	Moro-Philips C. and G. Complete Fertilizer.	James Thomson, Norristown,	10.42
49	Moro-Philips Farmers' Potato Mixture,	J. I. Goss, Lewistown,	10.13
286	Moro-Philips Farmers' Potato Mixture,	Lewis Kline, Pennsburg,	9.57
279	Moro-Philips 10 Per Cent. Potato and Vegetable Manure.	James Thomson, Norristown,	9.05
1117	Moro-Philips 10 Per Cent. Vegetable and Potato Manure.	Jeff. Altfather, Berlin,	11.10
570	Pacific Potato Phosphate, 1½-6-5,	James L. Culp, Indiana,	9.01
206	Packer's Union Animal Corn Fertillzer,	J. G. Miller, Kimmeton,	13.44
328	Packer's Union Potato Manure,	Jacob Krim, Boswell,	11.55
379	Packer's Union Universal Fertilizer,	H. A. Hill, Priestown,	10.35
371	Quinnipiac Climax Phosphate, 1¼-8-2,	James L. Culp, Indiana,	11.08
287	Read's Farmer's Friend Superphosphate,	H. C. Kehl, Pennsburg,	10.87
205	Read's Practical Potato Special,	Gill Walker, Glade,	7.65
387	Read's Standard Superphosphate,	Wm. R. Miller, Sinking Spring,	8.40
270	Read's Standard Superphosphate,	Jacob Kulp, Harleysville,	10.78
938	Reese's Harvest Queen,	Charles H. Hoppis, Oley,	9.28
714	Sharpless & Carpenter Farmer's Bone Phosphate.	Stuart Riley, Springville,	10.25
130	Sharpless & Carpenter Gilt Edge Potato and Tobacco Manure.	Hillis & Taggert, Norristown,	12.20
129	Sharpless & Carpenter No. 1 Bone Phosphate.	Hillis & Taggert, Norristown,	11.87
278	Sharpless & Carpenter Potato, Corn and Truck Guano.	B. Frank Rambo, Linfield,	7.95
549	Sharpless & Carpenter Royal Spring Mixture.	C. Y. Mowrey, Grovania,	6.25
131	Sharpless & Carpenter Tampico Guano,	Hillis & Taggert, Norristown,	8.55
218	Susquehanna Crop Grower,	A. A. Miller, Somerset,	12.62
214	Susquehanna Potato Phosphate,	A. A. Miller, Somerset,	12.45
325	Allen's Popular Phosphate,	A. F. Swank, Holsopple,	11.25
201	Allen's Star Potato Grower,	J. C. McMillen, Rockwood,	10.94
143	Wheeler's Royal Wheat Grower,	James Brady, Lansdale,	10.43
539	Williams & Clark's Americus H. G. Special.	J. H. Kase & Co., Riverside,	9.15

†Composite sample.

FERTILIZERS.

Potash and Nitrogen.

Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds. (Water Soluble.)				Nitrogen in 100 lbs.				
			Total.		Available.				Total.						
Soluble in water.	Reverted.	Insoluble.[1]	Found.	Guaranteed.	Found.	Guaranteed.	Present as muriate.	Present as sulphate.	Found.	Guaranteed.	Found.	Guaranteed.	Computed commercial value of 2,000 pounds at Department rating. (See p. 19.)	Selling price of 2,000 pounds at the point of selection.	Sample number.
3.11	4.84	.84	*8.79	9.00	*7.95	8.00	2.03	.....	2.03	2.00	.60	.41	18.81	17.00	441
4.13	1.93	1.22	7.28	6.00	6.06	5.00	9.98	.....	9.98	9.60	*4.33	5.77	43.68	42.00	1478
5.47	3.42	1.98	10.87	10.00	8.89	9.00	5.27	.....	*5.27	7.00	.86	.82	25.11	27.00	76
5.41	3.14	1.25	*9.80	10.00	*8.55	9.00	6.77	.....	*6.77	7.00	1.08	.82	27.19	25.00	385
2.83	4.65	.78	8.26	8.00	7.48	7.00	1.27	.....	1.27	1.00	.88	.82	18.91	.....	285
4.00	1.71	.87	6.58	6.00	5.71	5.00	10.50	.....	10.50	10.00	1.72	1.65	30.55	27.50	51
5.93	2.85	1.31	10.09	9.00	8.78	8.00	3.64	.....	*3.64	4.00	.94	.82	23.65	24.00	74
4.66	4.63	2.21	11.50	9.00	9.29	8.00	3.64	.....	3.64	2.00	*.83	1.03	23.97	23.50	73
5.23	3.70	.89	9.82	8.00	8.93	7.00	1.34	.....	1.34	1.00	1.01	.82	21.37	18.00	415
4.45	2.57	1.47	*8.49	9.00	*7.02	8.00	3.01	.....	3.01	3.00	2.08	2.06	26.64	25.00	425
6.43	2.94	1.06	10.43	10.00	9.37	9.00	2.15	.....	2.15	2.00	.98	.82	22.95	20.00	65
4.80	2.86	1.02	8.68	8.00	7.66	7.00	2.99	.....	2.99	1.00	.94	.82	21.49	18.00	66
2.73	3.43	1.62	7.78	7.00	6.16	6.00	5.07	.....	5.07	5.00	1.35	1.24	24.00	27.00	133
3.15	5.24	1.01	9.40	9.00	8.39	8.00	4.40	.....	4.40	4.00	.88	.82	25.25	25.00	134
7.08	2.38	1.02	10.48	10.00	9.46	9.00	2.23	.....	2.23	2.00	.93	.82	22.96	22.00	423
3.60	3.81	.96	8.37	8.00	7.41	7.00	1.82	.....	1.82	1.00	1.05	.82	20.29	19.00	165
5.19	2.86	.96	9.01	9.00	8.05	8.00	2.07	.....	2.07	2.00	1.12	1.03	21.68	21.00	166
4.64	3.50	.77	*8.91	9.00	8.14	8.00	2.04	.....	2.04	2.00	.83	.82	20.40	23.00	736
4.62	3.02	1.85	9.49	9.00	*7.64	8.00	4.00	.....	4.00	4.00	2.79	2.47	31.96	26.00	322
3.61	2.43	1.18	7.22	7.00	6.04	6.00	5.00	.....	5.00	5.00	1.52	1.24	24.40	22.00	324
2.29	5.94	1.57	9.80	9.00	8.23	8.00	2.07	.....	2.07	2.00	.84	.82	20.61	19.50	383
4.72	3.62	.96	9.31	9.00	8 35	8.00	4.07	.....	4.07	4.00	.95	.82	23.25	20.50	382
3.73	4.98	.67	9.38	9.00	8.71	8.00	2.90	.....	*2.90	3.00	1.67	1.65	25.70	23.00	275
5.27	4.06	1.32	10.65	9.00	9.33	8.00	9.72	.....	*9.72	10.00	1.70	1.65	34.03	32.00	1070
4.66	3.44	1.09	9.19	9.00	8.10	8.00	4.10	.....	4.10	4.00	.86	.82	22.62	22.00	168
2.17	4.70	2.30	9.17	8.00	*6.87	7.00	.92	.....	*.92	1.00	.86	.82	18.27	21.00	576
4.97	2.48	1.78	9.23	9.00	*7.45	8.00	2.45	.....	2.45	2.00	.85	.82	20.59	30.00	280
3.77	2.35	1.05	7.17	7.00	6.12	6.00	4.13	1.26	5.39	5.00	1.24	1.24	23.84	23.00	49
3.90	2.95	.69	7.54	7.00	6.85	6.00	5.03	.....	5.03	5.00	1.48	1.24	25.14	.....	286
5.26	3.46	.84	9.56	9.00	8.72	8.00	8.66	.....	*8.66	10.00	1.71	1.65	32.02	39.00	279
5.33	2.80	1.28	9.41	9.00	8.13	8.00	9.71	.....	*9.71	10.00	*1.55	1.65	31.98	28.00	1117
3.91	3.36	1.22	8.43	7.00	7.21	6.00	4.90	.....	*4.90	5.00	1.50	1.24	25.63	25.00	570
6.84	2.68	.93	10.45	10.00	9.52	9.00	2.20	.....	2.20	2.00	2.64	2.47	31.26	22.00	206
6.07	2.44	.80	9.31	9.00	8.51	8.00	6.12	.....	6.12	6.00	2.13	1.85	31.51	27.00	328
4.86	3.40	.91	9.17	9.00	8.26	8.00	3.98	.....	*3.98	4.00	.92	.82	22.83	20.00	379
5.28	3.29	2.55	11.12	9.00	8.57	8.00	2.39	.....	2.39	2.00	*.86	1.03	22.12	22.00	571
3.90	4.31	1.00	9.21	9.00	8.21	8.00	3.14	.....	3.14	3.00	1.97	1.85	27.02	20.00	287
2.19	2.49	.54	5.22	.....	4.68	.....	8.88	.....	8.88	.....	.86	.....	23.25	21.00	205
3.52	4.74	1.15	9.41	9.00	8.26	8.00	4.47	.....	4.47	4.00	.82	.82	22.76	22.50	387
4.81	3.38	.96	9.15	9.00	8.19	8.00	3.93	.....	*3.93	4.00	.93	.82	23.00	21.00	270
4.49	3.67	1.35	9.51	9.00	8.16	8.00	2.56	.....	2.56	2.00	1.18	1.03	22.90	21.00	938
6.44	2.01	1.69	10.14	9.00	8.45	8.00	1.41	2.81	4.22	4.00	.82	.82	23.84	24.00	714
6.72	2.27	.80	9.79	9.00	8.99	8.00	10.02	.....	10.02	10.00	1.69	1.65	33.88	29.00	130
4.46	3.30	1.49	9.25	9.00	*7.76	8.00	2.25	.....	2.25	2.00	1.72	1.65	24.68	24.00	129
2.22	3.75	.92	*6.89	7.00	*5.97	6.00	5.20	.....	5.20	5.00	1.39	1.24	23.78	27.00	278
3.62	4.42	1.50	9.54	9.00	8.04	8.00	2.21	.....	2.21	2.00	.98	.82	21.42	.....	549
5.72	2.03	1.47	9.22	9.00	*7.75	8.00	8.32	.....	8.32	7 00	3.87	3.30	41.58	34.00	131
3.61	3 99	.75	8.35	8.00	7.60	7.00	1.65	.....	1.65	1.00	1.04	.82	26.25	17.00	213
5.41	2.68	1.16	9.25	9.00	8.09	8.00	5.54	.....	5.54	5.00	1.76	1.65	28.63	25.00	214
3.90	4.18	1.38	9.46	9.00	8.08	8.00	2.02	.....	2 02	2.00	.89	.82	20.71	.....	325
3.63	2.67	.88	7.18	7.00	6.30	6.00	5.34	.....	5.34	5.00	*1.20	1.24	23.44	21.00	201
4.68	4.07	1.06	9.81	9.00	8.75	8.00	2.41	.....	2.41	2.00	.85	.82	21.56	21.00	143
6.46	2.25	1.16	9.87	9.00	8.71	8.00	6.60	.....	*6.60	7.00	*3 20	2 30	37.60	35.00	539

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.
277	Williams & Clark's Good Growth Potato Phosphate.	C. R. Rosenberger, Colmar,	8.35
386	Zell's Hustler Phosphate.	David G. Miller, Sinking Springs,	11.31
	Bradley Branch, New York.		
97	B. D. Sea Fowl Guano,	A. C. Hunter & Sons, Emlenton,	11.85
782	Dissolved Bone and Potash,	R. L. Stebbins, Mosiertown,	11.80
	Canton Chemical Branch, New York.		
235	Baker's Special Wheat, Corn and Grass Mixture.	Lewis Heffner, Pine Grove,	11.61
236	C. C. C. Special Compound,	Lewis Heffner, Pine Grove,	10.35
234	Potato Manure,	Lewis Heffner, Pine Grove,	9.05
243	Resurgam Guano,	Lewis Heffner, Pine Grove,	9.88
	Crocker Branch, New York.		
114	Complete Manure,	Union Coal and Sup. Co., Union City,	13.44
98	Crocker's General Crop Fertilizer,	H. B. Mitchell & Co., Emlenton,	10.16
	Cumberland Branch, New York.		
1349	Cumberland Guano,	Hyde Bros., Shadeland,	11.35
1347	Hawkeye Fertilizer,	Hyde Bros., Shadeland,	9.26
	Detrick Branch, New York.		
438	Corn, Oat and Fertilizer,	B. F. Horting, Newport,	12.65
638	Detrick's Paragon Ammoniated Bone Phosphate and Potash.	Joseph Gochnaner, East Berlin,	11.09
	Great Eastern Branch, New York.		
1360	Great Eastern Cabbage Grower,	F. L. Atwell, Emlenton,	12.17
30	Great Eastern General,	William Jones, New London,	9.25
1180	Great Eastern Wheat Special,	Wm. Overdorff, Red Lion,	11.84
1359	English Wheat Grower,	F. L. Atwell, Emlenton,	10.23
	Lazaretto Branch, New York.		
1158	Lazaretto Special Potato Fertilizer,	Hanover Produce Co., New Oxford,	11.14
	Maryland Branch, New York.		
784	Special Compound for Potatoes and Tobacco.	R. L. Stebbins, Mosiertown,	10.90
	Milsom Branch, New York.		
1358	Potato, Hop and Tobacco Fertilizer,	D. C. Waldo, Cambridge Springs,	11.91
786	Vegetable Bone Fertilizer,	R. L. Stebbins, Mosiertown,	11.39
	Moro-Phillips Branch, New York.		
496	Moro-Phillips Farmer's Phosphate,	S. H. Donkel, Crosskill Mills,	8.90
498	Moro-Phillips Farmer's Potato Mixture,	S. H. Donkel, Crosskill Mills,	8.00
	Niagara Branch, New York.		
1355	Wheat and Corn Fertilizer,	D. C. Waldo, Cambridge Springs,	9.24
	Packers Union Branch, New York.		
306	Universal Fertilizer,	R. M. McDowell, Emlenton,	12.18
	Reese Branch, New York.		
492	Reese's Pilgrim Fertilizer,	J. R. Meck, Meckville,	8.98
218	Reese's Potato Manure,	Harry Keefer, Pine Grove,	11.63
	Sharpless & Carpenter Branch, New York.		
1308	Sharpless & Carpenter's Dissolved Bone Phosphate for Potatoes and General Use.	Hobensack Bros., Ivyland,	9.95
256	Gilt Edge Potato and Tobacco Manure,	Yost & Kleckner, Ringtown,	9.34
470	No. 1 Bone Phosphate,	Jonas Kunkle, New Ringgold,	8.75
255	Royal Spring Mixture,	Yost & Kleckner, Ringtown,	11.14
475	Soluble Tampico Guano,	Jonas Kunkle, New Ringgold,	11.07

†Composite sample.

LIZERS—Continued.

Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds. (Water Soluble.)				Nitrogen in 100 lbs.		Computed commercial value of 2,000 pounds at Department rating. (See p. 19.)	Selling price of 2,000 pounds at the point of selection.	Sample number.
			Total.		Available.				Total.						
Soluble in water.	Reverted.	Insoluble.	Found.	Guaranteed.	Found.	Guaranteed.	Present as muriate.	Present as sulphate.	Found.	Guaranteed.	Found.	Guaranteed.			
2.81	3.87	.73	7.41	7.00	6.68	6.00	4.88	.....	*4.88	5.00	1.31	1.24	23.68	26.00	277
5.19	4.16	.73	10.02	10.00	9.29	9.00	3.03	.....	3.03	3.00	.99	.82	23.43	22.00	386
5.68	3.98	1.85	11.51	9.00	9.66	8.00	1.67	.....	1.67	1.25	2.16	2.00	28.66	26.00	97
5.48	3.60	.71	9.79	9.00	9.08	8.00	2.70	.....	2.70	2.00	*1.02	1.03	22.90	23.00	782
4.45	4.82	.80	10.07	10.00	9.27	9.00	2.08	.....	2.08	2.00	.96	.82	22.14	19.70	235
3.64	4.55	1.06	9.25	9.00	8.19	8.00	6.20	.....	6.20	6.00	*1.93	2.00	30.13	26.00	236
2.11	3.93	1.56	7.60	7.00	6.04	6.00	4.96	.....	*4.96	5.00	1.24	1.24	23.14	22.00	234
3.28	4.96	1.25	9.49	9.00	8.24	8.00	5.01	.....	5.01	4.00	1.32	.82	25.81	20.65	243
4.85	3.61	1.37	9.83	9.00	8.46	8.00	4.00	.....	4.00	4.00	1.00	.82	24.02	22.50	114
1.64	4.65	1.88	8.17	8.00	*6.29	7.00	1.22	.....	1.22	1.00	.99	.82	18.44	21.00	98
4.68	3.79	1.10	9.57	9.00	8.47	8.00	2.73	.....	2.73	2.00	1.08	1.03	22.83	.....	1349
2.93	4.08	1.71	8.72	8.00	7.01	7.00	3.74	.....	3.74	1.00	1.16	.82	22.63	.....	1347
5.61	3.31	1.27	10.19	10.00	*8.92	9.00	3.03	.....	3.03	3.00	97	.82	23.10	19.50	438
3.88	3.46	.97	8.31	8.00	7.34	7.00	1.42	.....	1.42	1.00	.92	.82	19.12	17.25	638
6.31	3.66	1.22	11.19	.....	9.97	.....	7.24	.....	7.24	.....	1.02	.....	28.82	25.00	1360
4.58	4.00	.76	9.34	9.00	8.58	8.00	4.56	.....	4.56	4.00	.97	.82	23.92	20.00	30
5.15	3.24	1.15	9.54	9.00	8.39	8.00	2.07	.....	2.07	2.00	1.77	1.65	25.35	22.00	1180
4.18	4.89	2.12	11.19	9.00	9.07	8.00	3.73	.....	3.73	2.00	1.05	.82	24.74	24.00	1359
5.41	3.03	1.07	9.51	9.00	8.44	8.00	3.99	.....	*3.99	4.00	.89	.82	23.19	19.00	1158
5.94	3.55	1.02	10.51	9.00	9.49	8.00	9.52	.....	*9.52	10.00	*1.53	1.65	33.19	32.00	784
5.65	5.22	.91	11.78	9.00	10.87	8.00	3.39	.....	3.39	3.00	*1.34	2.06	27.49	28.00	1358
5.19	5.20	1.60	11.99	9.00	10.39	8.00	5.07	.....	*5.07	7.00	*2.63	3.30	35.22	35.00	786
.99	5.91	1.81	8.71	8.00	*6.90	7.00	1.03	.....	1.03	1.00	.93	.82	18.58	17.50	496
2.42	3.55	1.48	7.45	7.00	*5.97	6.00	5.02	.....	5.02	5.00	1.44	1.24	24.08	21.00	498
5.10	4.12	1.68	10.90	10.00	9.22	9.00	2.92	.....	2.92	2.00	1.77	1.24	27.34	25.00	1355
5.42	3.55	1.41	10.38	9.00	8.97	8.00	4.23	.....	4.23	4.00	.88	.82	24.21	22.00	306
4.90	3.54	.97	9.41	9.00	8.44	8.00	4.02	.....	4.02	4.00	.93	.82	23.34	20.00	492
5.80	3.40	.81	10.01	10.00	9.20	9.00	7.17	.....	7.17	7.00	1.02	.82	27.63	24.00	218
3.77	4.08	1.50	9.35	9.00	*7.85	8.00	6.03	.....	6.03	6.00	2.10	2.06	30.55	27.00	1308
3.22	3.84	.91	*7.97	9.00	*7.06	8.00	11.53	.....	11.53	10.00	1.74	1.65	33.24	30.00	256
3.19	5.22	1.15	9.56	9.00	8.41	8.00	2.06	.....	2.06	2.00	1.71	1.65	24.86	22.00	470
3.07	5.16	1.07	9.30	9.00	8.23	8.00	2.09	.....	2.09	2.00	.90	.82	20.77	20.00	255
3.65	4.34	1.32	9.31	9.00	*7.99	8.00	6.24	.....	*6.24	7.00	*2.80	3.30	34.26	32.00	475

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.
	Susquehanna Branch, New York.		
643	Crop Grower,	Henry Sunday, East Berlin,	11.41
44	Special Potato and Tobacco Manure,	Joseph Brown, Oxford,	11.70
484	X. X. V. Phosphate,	Mary E. Boyer, Shelisville,	10.85
	Tygert-Allen Branch, New York.		
825	Allen's Special Brand Potato Manure,	Harry L. Palmer, Langhorne,	9.50
818	Tygert-Allen Standard Bone Phosphate,	Quincy Fretz, Bedminster,	10.15
819	Tygert-Allen Ten Per Cent. Potato and Vegetable Manure.	Quincy Fretz, Bedminster,	7.50
	M. E. Wheeler & Co. Branch, New York.		
769	Corn Fertilizer,	R. M. McDowell, Emlenton,	11.65
	Zell Branch, New York.		
439	Economizer Phosphate,	B. F. Horting, Newport,	12.25
1188	Zell's Hustler Phosphate,	A. A. Ehrhart, Dallastown,	12.58
1203	Zell's Little Giant,	O. F. Arnold, Dillsburg,	9.70
	American Reduction Co., Pittsburg.		
933	†Century Bone and Potash,	D. B. Douds & Sons, Monaca,	5.35
1520		N. F. Holtzer, Greensburg,	
196	Common Sense,	Moses Liphart, Casselman,	5.14
334	†Common Sense Pittsburg Guano,	J. E. Gallagher, New Alexandria,	4.83
77		G. H. Hirchler, Love,	
1674		H. J. Kingle & Co., Butler,	
197	†Iron City,	Moses Liphart, Casselman,	4.23
1076		H. J. Kingle & Co., Butler,	
	Armour's Fertilizer Works, Baltimore, Md.		
1252	Armour's All Soluble Fertilizer,	McCalmont & Co., Bellefonte,	10.97
109	Blood, Bone and Potash,	Acme Milling Co., Corry,	5.94
23	Fruit and Root Crop Special,	Dewees & Bracken, Paoli,	8.98
103	Grain Grower,	Acme Milling Co., Corry,	8.77
449	Armour's High Grade Potato,	J. L. Ritter & Son, Newport,	7.06
24	High Grade Potato,	Dewees & Bracken, Paoli,	6.32
882	Armour's Superior Bone and Potash Fertilizer.	E. W. Michael, Hughesville,	7.10
104	Wheat, Corn and Oats Special,	Acme Milling Co., Corry,	9.15
410	Armour's Royal Ammoniated Bone,	Beevits & Sons, Somerset,	8.63
524	Armour's Wheat Special Fertilizer,	J. W. Painter & Co., Lewisburg,	7.08
	Baltimore Pulverizing Co., Baltimore, Md.		
456	Farmer's Favorite F. F. F.,	J. R. Gordon, Markelville,	4.18
	Baugh & Sons Co., Philadelphia, Pa.		
654	†Baugh's Ammoniated Soluble Alkaline,	D. M. Frey & Shaffer, Hanover,	8.09
263		Kipp & Moore, Millerstown,	
823		L. D. Yoder, Dublin,	
284	†Baugh's Complete Animal Bone Fertilizer.	Charles Garber, Royersford,	8.68
254		Yost & Kleckner, Ringtown,	
301		J. B. Atwell, Emlenton,	
6	Baugh's Double Eagle $25 Phosphate,	E. A. and J. L. Pennock, Chatham,	9.26
12	Baugh's Excelsior Guano,	Pennock & Brosius, Avondale,	9.33
4	Baugh's General Crop Grower for all Crops,	E. A. and J. L. Pennock, Chatham,	9.39
302	Peninsula Grass Producer,	J. B. Atwell, Emlenton,	8.65
541	Baugh's Peruvian Guano Substitute for Potatoes and all Vegetables.	Boettinger & Dietz, Danville,	8.84
906	†Baugh's Potato and Truck Special for all Truck Crops.	N. F. Reed, New Cumberland,	8.81
253		Yost & Kleckner, Ringtown,	
1494		N. L. Stultz, Duncansville,	
5	Baugh's Special Potato Manure,	E. A. and J. L. Pennock, Chatham,	7.02
	The Berg Company, Philadelphia, Pa.		
142	Berg's Special $25 Phosphate,	James Brady, Lansdale,	9.46

†Composite sample.

LIZERS--Continued.

Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds. (Water Soluble.)				Nitrogen in 100 lbs.				
			Total.		Available.				Total.						
Soluble in water.	Reverted.	Insoluble.	Found.	Guaranteed.	Found.	Guaranteed.	Present as muriate.	Present as sulphate.	Found.	Guaranteed.	Found.	Guaranteed.	Computed commercial value of 2,000 pounds at Department rating. (See p. 19.)	Selling price of 2,000 pounds at the point of selection.	Sample number.
3.11	4.15	1.05	8.31	8.00	7.26	7.00	1.49	.....	1.49	1.00	.85	.82	18.84	17.00	643
6.88	2.49	.59	9.96	9.00	9.37	8.00	9.70	.....	*9.70	10.00	1.70	1.65	33.87	29.00	41
2.63	5.63	1.40	9.66	9.00	8.26	8.00	1.46	.....	1.46	1.00	.94	.82	20.46	19.50	484
3.49	4.43	1.20	9.12	9.00	*7.92	8.00	5.89	.....	*5.89	6.00	2.07	2.06	30.04	29.00	825
3.90	4.69	1.02	9.61	9.00	8.59	8.00	2.39	.....	2.39	2.00	*1.46	1.65	24.22	24.00	818
5.10	3.18	1.10	9.38	9.00	8.28	8.00	9.33	.....	*9.33	10.00	1.81	1.65	33.46	30.00	819
5.46	3.97	1.15	10.58	9.00	9.43	8.00	1.82	.....	*1.82	2.00	*1.56	1.65	25.28	24.00	769
5.36	3.90	1.25	10.51	9.00	9.26	8.00	2.11	.....	2.11	2.00	.97	.82	22.46	17.50	439
5.92	3.23	1.33	10.48	10.00	9.15	9.00	2.77	.....	*2.77	3.00	1.01	.82	23.37	20.00	1188
4.59	3.21	1.05	8.85	8.00	7.80	7.00	1.84	.....	1.84	1.00	1.22	.82	21.67	18.00	1203
4.84	2.94	1.58	9.36	8.00	7.78	7.00	4.50	.....	4.50	4.00	1.45	1.24	25.89	25.00	993
														.....	1520
6.12	2.66	.77	8.95	8.00	8.18	7.00	2.23	.....	2.23	1.00	*1.13	1.24	22.32	15.00	196
														20.00	334
4.64	3.07	1.73	9.44	8.00	7.71	7.00	2.17	.....	2.17	1.00	1.35	1.24	22.96	.....	77
														19.50	1074
2.86	3.99	4.61	11.46	9.00	*6.85	8.00	3.72	.....	3.72	2.00	2.06	1.65	28.22	19.00	197
														23.50	1076
7.01	1.70	.51	9.22	.....	8.71	.....	4.70	.....	4.70	.....	3.19	.....	35.42	30.00	1252
5.15	3.49	3.38	12.02	10.00	8.64	8.00	.67	6.91	7.58	7.00	4.12	4.12	45.14	38.00	109
5.45	2.76	1.11	*9.32	10.00	8.21	8.00	5.57	.....	5.57	5.00	1.78	1.65	28.96	26.00	23
5.19	4.08	1.31	10.58	10.00	9.27	8.00	1.83	.....	*1.83	2.00	*1.37	1.65	24.23	25.00	103
6.68	1.97	1.47	10.12	10.00	8.65	8.00	10.71	.....	10.71	10.00	1.86	1.65	35.02	29.00	449
6.89	1.91	1.02	*9.82	10.00	8.80	8.00	10.51	.....	10.51	10.00	1.93	1.65	35.53	30.00	24
6.83	4.04	.96	11.83	10.00	10.87	8.00	7.54	.....	7.54	7.00	.89	.82	29.59	.....	882
3.99	4.87	.92	9.78	9.00	8.96	7.00	1.38	.....	1.38	1.00	.92	.82	20.78	22.00	104
5.18	3.43	.82	9.43	.....	8.61	.....	4.56	.....	4.56	.....	.95	.....	24.08	23.00	410
5.99	3.11	1.10	10.20	10.00	9.10	8.00	2.13	.....	2.13	2.00	.91	.82	22.10	21.00	524
1.58	2.92	.34	4.84	.....	*4.50	5.50	2.75	.....	2.75	1.60	*.65	.82	15.63	13.50	456
3.03	5.18	1.78	9.99	.....	8.21	8.00	2.71	.....	2.71	2.60	.54	.41	16.82	17.00	654
														16.75	263
														19.00	823
5.92	2.64	1.66	10.22	.....	8.56	8.00	5.33	.....	5.33	5.00	1.91	1.65	29.95	27.00	284
														27.00	254
														27.00	301
5.59	2.64	1.52	9.75	.....	8.23	8.00	1.97	.....	1.97	1.00	1.83	1.65	25.81	21.00	6
6.44	1.79	1.36	9.59	.....	8.23	8.00	4.20	.....	4.20	4.00	1.11	.82	24.43	21.00	12
3.04	5.23	2.22	10.49	.....	8.27	8.00	1.50	.....	1.50	1.00	1.06	.82	21.50	18.00	4
4.03	4.10	1.30	9.43	.....	8.13	8.00	3.95	.....	3.95	2.00	1.43	.82	25.48	24.00	302
4.72	1.93	1.58	8.23	.....	6.65	6.00	8.78	.....	8.78	7.00	4.09	4.12	42.07	35.00	541
4.72	2.29	1.24	8.25	.....	7.01	7.00	7.76	.....	7.76	7.00	3.22	2.88	36.78	31.00	906
														32.00	253
														32.00	1494
4.03	2.13	.95	7 11	.....	6.16	5.00	9.66	.....	*9.66	10.00	1.79	1.65	30.68	28.00	5
5.01	3.96	3.76	12.73	.....	8.97	.....	4.19	.....	4.19	.....	1.90	.....	30.15	24.00	142

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.
265	†Berg's $35 Potato Manure,	James Brady, Lansdale,	9.73
1313		J. A. Danenhower, Southampton,	
971		A. B. Groff, New Holland,	
950	†Berg's Special $25 Bone Manure,	H. S. Hauze, Birdsboro,	6.75
1280		Wm. M. Holbert, Warrington,	
969	Berg's Tobacco Manure,	A. B. Groff, New Holland,	7.18
1471	Berg's Vigor-Volo,	S. Book & Bro., Quarryville,	4.25
	Berger Bros., Easton, Pa.		
1240	Potato and Truck Special,	J. M. Kieffer, Easton,	8.11
	A. H. Blaker & Co., Fox Chase, Pa.		
811	Blaker's Special Fertilizer for Potatoes,	A. H. Blaker & Co., Fox Chase,	4.40
	Bowker Fertilizer Co., Boston, Mass.		
394	Bowker's Ammoniated O. I. O. Phosphate,	William Merkel, Hamburg,	9.22
290	Corn and Grain Grower,	Kernochan & Co., Titusville,	13.44
1094	Bowker's Corn and Grass Grower,	C. T. Wills & Co., Parnassus,	11.68
294	Hill and Drill Phosphate,	Kernochan & Co., Titusville,	12.78
119	Ideal Potash Compound,	Kernochan & Co., Titusville,	12.37
289	Market Garden Fertilizer,	Kernochan & Co., Titusville,	12.02
776	Potash or Staple,	O. Wykoff, Seagertown,	11.96
120	Six Per Cent. Potato Fertilizer,	Kernochan & Co., Titusville,	13.70
291	Shure Crop Phosphate,	Kernochan & Co., Titusville,	13.41
702	Stockbridge Complete Manure for Potatoes and Vegetables.	B. C. Tourje, New Milford,	9.85
	S. B. Brodbeck, Brodbecks, Pa.		
650	Brodbeck's Special Potato Fertilizer,	D. M. Frey & Shaffer, Hanover,	8.57
	Buffalo Fertilizer Co., Buffalo, N. Y.		
1042	Celery and Potato Special,	E. O. Campbell, East Smithfield,	10.04
78	Farmer's Choice,	J. C. Black, Knob,	12.93
673	High Grade Manure,	Frank Buttolph, Windham,	12.37
297	Ideal Wheat and Corn,	B. Corwin, Pleasantville,	16.19
1066	Vegetable and Potato,	Wm. H. Claypool, Worthington,	6.48
	Cambria Fertilizer Co., Johnstown, Pa.		
915	†Corn and Potato Manure,	E. and M. Roberts, Portage,	9.24
1519		E. H. Silvis, Greensburg,	
	Coe-Mortimer Co., New York.		
748	E. Frank Coe's Gold Brand Excelsior Guano.	I. C. Novmyer, Lewistown,	10.44
1600	Genuine Peruvian Guano,	Rohrbach & Stambaugh, Nashville,	10.05
1601	Peruvian Vegetable Grower Guano Base,	Rohrbach & Stambaugh, Nashville,	8.68
749	E. Frank Coe's Columbia Corn and Potato Fertilizer.	F. C. Novmyer, Lewistown,	12.03
	Henry Cope & Co., Lincoln University, Pa.		
793	Potato and Corn Phosphate,	Wm. K. McClurg, Oxford,	8.78
48	Queen of Elk Valley Phosphate,	Wm. K. McClurg, Oxford,	10.15
	Josiah Cope & Co., Baltimore, Md.		
958		Jones Eavenson, Christiana,	
27	†Potato and Tobacco Phosphate,	Harry Wilson, Frazer,	10.11
1118		H. L. Countryman, Berlin,	
159	Potato and Tobacco Phosphate,	Jerome Stufft, Stoyestown,	11.77
405	Wheat and Corn Special,	R. S. Dreibelbis, Virginsville,	8.97
21	†Wheat and Grass Special,	Harry Wilson, Frazer,	12.50
158		Jerome Stufft, Stoyestown,	
	E. Daron, Dover, Pa.		
1164	E. Daron's Harvest King Bone Phosphate,	E. Daron, Dover,	12.17
	J. Scott Dickey Co., Lancaster, Pa.		
1454	Eagle Brand,	J. D. Sellers, Ephrata,	8.00
1453	J. S. D. Brand,	J. D. Sellers, Ephrata,	9.37

†Composite sample.

LIZERS—Continued.

Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds. (Water Soluble.)				Nitrogen in 100 lbs.		Computed commercial value of 2,000 pounds at Department rating. (See p. 19.)	Selling price of 2,000 pounds at the point of selection.	Sample number.
			Total.		Available.				Total.						
Soluble in water.	Reverted.	Insoluble.	Found.	Guaranteed.	Found.	Guaranteed.	Present as muriate.	Present as sulphate.	Found.	Guaranteed.	Found.	Guaranteed.			
4.88	3.00	4.31	12.19	.....	*7.88	8.00	8.37	.....	*8.37	10.00	*2.06	3.00	34.20	34.00	265
														33.00	1313
														25.00	971
6.66	2.76	2.31	11.73	.....	9.42	7.00	3.38	.....	3.38	3.00	*1.19	2.00	25.89	.....	950
														25.00	1280
5.79	2.32	2.83	10.94	.....	8.11	8.00	4.41	.....	*4.41	10.00	*1.27	3.00	25.89	28.00	969
3.11	4.49	5.46	13.06	.....	*7.60	18.00	6.25	.....	*6.25	9.00	*1.90	2.00	31.32	28.50	1471
4.39	2.09	1.61	8.09	7.00	6.48	6.00	6.15	.....	6.15	6.00	1.94	1.65	28.59	27.00	1240
2.60	4.97	1.66	9.23	.....	7.57	.....	4.93	.....	4.93	.....	1.23	.....	24.92	30.00	811
4.46	6.23	.99	11.68	11.00	10.69	10.00	.85	.....	.85	.....	.81	.62	21.78	16.00	394
5.54	3.39	1.04	9.97	9.00	8.93	8.00	3.82	.....	*3.82	4.00	.99	.82	24.01	27.00	290
5.14	3.72	1.37	10.23	9.00	8.86	8.00	4.39	.....	4.39	4.00	.99	.82	24.69	24.00	1094
5.76	4.58	1.11	11.45	10.00	10.34	9.00	2.94	.....	2.94	2.00	*1.85	2.47	28.92	30.00	294
7.38	3.70	1.22	12.30	11.00	11.08	10.00	6.05	.....	6.05	6.00	1.28	1.24	30.42	30.00	119
4.27	3.86	.72	8.85	7.00	8.13	6.00	8.49	.....	*8.49	10.00	2.58	2.47	35.53	40.00	289
5.10	3.44	.89	9.43	9.00	8.54	8.00	2.81	.....	*2.81	3.00	.98	.82	22.46	24.00	776
4.41	3.66	.79	8.86	7.00	8.07	6.00	4.98	.....	*4.98	6.00	1.14	.82	24.78	28.00	120
5.86	3.92	.93	10.71	10.00	9.78	9.00	2.52	.....	2.52	2.00	1.20	.82	24.55	25.00	291
4.25	2.28	1.86	8.39	7.00	6.53	6.00	9.34	.....	*9.34	10.00	*3.08	3.30	37.42	40.00	702
5.75	2.08	2.88	10.71	9.00	*7.83	8.00	4.82	.....	4.82	4.00	1.02	.82	24.75	20.00	650
3.95	4.14	.64	*8.73	9.00	8.09	8.00	5.85	.....	*5.85	10.00	*1.45	1.65	27.04	28.00	1042
2.55	3.90	1.65	*8.10	9.00	*6.45	8.00	4.16	.....	*4.16	5.00	*.81	.82	20.64	.....	78
1.90	3.83	1.73	*7.46	8.00	*5.73	7.00	9.50	.....	*9.50	10.00	*2.95	3.30	35.88	28.00	673
3.02	4.72	1.71	*9.45	10.00	*7.74	9.00	5.26	.....	5.26	5.00	1.75	1.65	27.92	28.00	297
1.60	3.25	3.28	*8.13	9.00	*4.85	8.00	7.44	.....	7.44	7.00	3.74	2.47	37.47	.....	1066
4.08	2.40	1.73	8.21	7.00	6.48	6.00	6.63	.....	*6.63	8.00	1.90	1.50	28.86	29.00	915
														32.00	1519
3.08	3.64	1.02	*7.74	10.00	*6.72	8.00	6.27	.....	6.27	6.00	2.76	2.47	32.46	30.00	748
.64	6.00	8.42	15.06	15.00	*6.64	9.00	1.47	3.10	*4.57	4.75	*2.83	2.88	34.92	36.50	1600
3.54	2.86	2.23	*8.63	11.00	*6.40	7.50	1.07	10.19	11.26	8.75	4.09	3.49	46.30	37.00	1601
3.37	4.29	1.14	*8.80	10.50	*7.66	8.50	3.09	.....	3.09	2.50	1.56	1.24	24.42	22.00	749
2.63	4.82	1.76	9.21	9.00	*7.45	8.00	4.19	.....	4.19	4.50	*1.14	1.24	23.55	23.00	793
3.34	4.06	.98	*8.38	10.00	*7.40	9.00	9.21	.....	9.21	8.00	*1.50	1.65	30.04	25.00	48
4.83	5.25	.73	*10.81	12.00	10.08	10.00	7.15	.....	7.15	7.00	.96	.82	28.21	24.00	958
														23.00	27
														20.00	1118
7.01	3.19	.54	*10.74	12.00	10.20	10.00	8.30	.....	8.30	7.00	*.80	.82	28.93	23.00	159
1.79	6.49	1.49	9 77	9.00	8.28	8.00	1.26	.....	1.26	1.00	.91	.82	19.98	15.90	405
4.39	3.90	1.20	9.49	9.00	8.29	8.00	1.31	.....	1.31	1.00	.98	.82	20.72	18.00	21
														17.75	158
3.54	4.95	.74	*9.23	10.00	8.49	8.00	4.80	.....	*4.80	5.00	*1.48	1.65	26.65	22.00	1164
4.59	3.01	2.42	10.02	.....	*7.60	10.00	3.37	.....	*3.37	4.00	1.04	.82	22.90	18.00	1454
4.08	3.27	2.51	9.86	.....	*7.35	10.00	3.26	.....	3.26	2.00	1.05	.82	22.52	16.00	1453

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.
1455	Tobacco and Truck Fertilizer No. 1,	J. D. Sellers, Ephrata,	10.85
1452	Tobacco and Truck Fertilizer No. 2,	J. D. Sellers, Ephrata,	8.70
	James G. Downward Co., Coatesville, Pa.		
29	Ammoniated Bone Phosphate,	John G. Thomas, Frazer,	9.15
377	†Royal Bone Phosphate,	J. F. Bertolet, Fleetwood,	8.45
1246		Jere Underwood, Ambler,	
816		Harry Schmidt, Doylestown,	
37	†Special Potato Fertilizer,	Thomas Agnew, New London,	8.11
1247		Jere Underwood, Ambler,	
	Wallace Dungan, Doylestown.		
809	Pebble Hill Home-made Animal Bone Mixture.	Wallace Dungan, Doylestown,	8.95
808	†Potato Manure,	Wallace Dungan, Doylestown,	8.53
1278		Jos. Carroll, Jr., Neshaminy,	
	Amos Eby & Co., Paradise, Pa.		
1545	Pequa Ammoniated Phosphate,	Amos Eby & Co., Paradise,	10.65
1547	Pequa Bone for Potatoes,	Amos Eby & Co., Paradise,	10.69
	Eureka Fertilizer Co., Perryville, Md.		
839	Complete Compound,	Albert Copeland, Pomeroy,	9.69
64	Corn and Potato Special,	P. J. Ocker, Beaver Springs,	8.39
977	Eureka Wrapper Leaf,	Weaver Musselman, New Holland,	8.90
511	Farmer's Favorite Bone Phosphate,	M. C. Catherman, Millmont,	8.48
1165	Grain and Grass Mixture,	E. N. Ruppert, Greensburg,	11.20
52	Fish, Bone and Potash,	Jacob Lawns, McClure,	8.97
486	High Grade Trucker,	W. E. Urich, Myerstown,	6.54
180	Potato and Vegetable Fertilizer,	E. H. Urich, Myerstown,	11.08
	Farmers' Fertilizer & Feed Co., Westminster, Md.		
1464	*XX Bone Phosphate,	D. E Brown, East Berlin,	7.88
	Farmer's Fertilizer Works, Elizabethtown, Pa.		
368	Animal Bone and Potash,	W. B. Schmitman, Elizabethtown,	5.25
369	No. 1 Bone Phosphate,	W. B. Schmitman, Elizabethtown,	7.60
367	Special Potato and Tobacco Manure,	W. B. Schmitman, Elizabethtown,	6.68
	Griffith & Boyd, Baltimore, Md.		
154	Farmer's Improved Phosphate,	L. A. Meyers, Hooversville,	10.15
9	Farmer's Potato Manure,	E. A. and J. L. Pennock, Chatham,	10.43
8	Fish, Bone and Potash,	E. A. and J. L. Pennock, Chatham,	8.54
60	Valley Fertilizer,	J. B. Ewing, Beaver Spring,	11.25
7	Peerless Fertilizer,	E. A. and J. L. Penrock, Chatham,	11.40
10	Spring Crop Grower,	E. A. and J. L. Pennock, Chatham,	10.63
82	Vegetable Bone,	Geo. H. Hegner, Sewickley,	11.25
	Frank Hartranft, Coatesville, Pa.		
1274	Ammoniated Bone Phosphate,	Frank Hartranft, Coatesville,	7.98
1272	Cook's Bone Phosphate,	Frank Hartranft, Coatesville,	6.18
1273	Potato Phosphate,	Frank Hartranft, Coatesville,	10.19
1275	Special Phosphate,	Frank Hartranft, Coatesville,	11.75
	W. S. Hastings & Sons, Atglen, Pa.		
1550	Atglen Corn and Potato Guano,	Emanuel Waltman, Meehanics Grove,	12.08
	S. M. Hess & Bro., Philadelphia, Pa.		
1111	Potato and Truck Manure,	Howard Fike, Meyersdale,	9.75
624	Potato and Truck Manure,	C. W. Book, Port Royal,	9.62
463		Wilson Strausser, Shoemakersville,	
267	†Special Compound,	John H. Snyder, Lansdale,	9.75
464		Francis Faust, Orwigsburg,	
1446	Tobacco Manure,	Benjamin Weidner, Lititz,	9.73
499	†Special Potato Manure,	Adam Yeagley, Jonestown,	8.35
1259		J. C. Mirely, Alexandria,	
	William J. Hess, Quarryville, Pa.		
1484	No. 2 for Grain and Grass,	Wm. J. Hess, Quarryville,	8.08
	Hubbard Fertilizer Co., Baltimore, Md.		
975	Jersey Trueker, the Planter's Friend,	Geo. W. Bair, New Holland,	8.15

†Composite sample.

*This analysis was published in Bulletin 153, page 22 under the brand name "No. 1 Bone Phosphate" when it should have read "XX Bone Phosphate."

LIZERS—Continued.

Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds (Water Soluble.)				Nitrogen in 100 lbs.		Computed commercial value of 2,000 pounds at Department rating. (See p. 19.)	Selling price of 2,000 pounds at the point of selection.	Sample number.
Soluble in water.	Reverted.	Insoluble.	Total.		Available.		Present as muriate.	Present as sulphate.	Total						
			Found.	Guaranteed.	Found.	Guaranteed.			Found.	Guaranteed.	Found.	Guaranteed.			
5.15	2.57	1.47	9.19	.....	*7.72	8.00	8.68	.....	*8.68	10.00	*1.47	2.06	26.10	25.00	1455
6.45	2.78	1.71	10.94	.....	9.23	8.00	6.10	.....	*6.10	7.00	*1.47	1.65	29.35	22.50	1452
3.98	3.05	1.43	8.46	8.00	7.03	6.00	3.74	.....	3.74	3.50	.89	.82	21.43	25.00	29
4.97	3.16	1.33	9.43	9.00	8.13	8.00	2.37	.....	2.37	2.00	.94	.82	21.48	20.00	377
														25.00	1246
														27.00	816
4.62	2.96	1.19	8.77	8.00	7.58	7.00	4.24	.....	*4.24	6.00	1.30	1.24	24.42	27.00	37
														28.00	1247
2.35	4.44	7.72	14.51	12.00	*6.79	9.00	5.05	.....	5.05	5.00	*2.56	3.30	33.43	29.00	809
2.42	3.67	5.78	11.87	9.00	*6.09	7.00	10.17	.....	10.17	10.00	*2.10	3.09	34.70	31.00	865
														28.00	1278
7.46	3.06	2.41	12.93	12.00	10.52	10.00	2.11	.....	2.11	1.50	.97	.82	24.68	19.50	1545
5.88	2.84	1.76	10.48	10.00	8.72	8.00	6.96	.....	*6.96	7.00	2.49	2.06	34.80	29.50	1547
4.67	5.78	2.07	12.52	9.00	10.45	7.00	4.45	.....	*4.45	5.00	.84	.82	25.95	18.00	830
6.03	4.10	2.14	12.27	11.00	10.13	9.00	2.20	.....	*2.20	3.00	1.11	.82	24.72	24.00	64
5.18	4.02	1.99	11.19	10.00	9.20	8.00	4.51	.....	*4.51	6.00	*2.24	2.47	31.35	31.00	977
6.15	4.38	2.55	13.08	10.00	10.53	8.00	1.75	.....	*1 75	2.00	*1.44	2.00	26.68	20.00	511
6.04	3.91	2.29	12.24	10.00	9.95	8.00	2.91	.....	2.91	2.00	*.77	.82	23.64	20.00	1103
2.71	7.73	2.82	13.26	9.00	10.44	8.00	.67	1.18	1.85	1.00	.51	.41	17.82	16.00	52
5.05	3.36	2.17	10.58	10.00	8.41	8.00	9.33	.....	*9.33	10.00	1.79	1.65	33.54	30.00	486
6.86	3.47	2.21	12.54	9.00	10.33	8.00	3.60	.....	*3.60	4.00	1.70	1.65	29.19	26.00	180
6.69	2.22	.78	*9.69	10.00	*8.91	9.00	3.77	.....	3.77	3.00	.86	.82	21.74	19.00	1464
2.72	2.92	3.14	8.78	.....	*5.64	7.00	7.90	.....	7.90	5.00	*1.47	1.65	27.55	22.00	368
4.01	2.94	2.84	9.79	.....	*6.95	8.00	3.05	.....	3.05	2.00	*1.60	1.65	24.74	19.00	369
2.73	3.62	3.11	9.46	.....	6.35	6.00	9.69	.....	*9.69	10.00	*2.17	2.47	33.56	30.00	367
5.24	2.43	1.75	9.42	8.00	7.67	7.00	2.28	.....	2.28	1.50	.84	.82	20.67	21.00	154
4.99	2.93	1.62	9.54	9.00	*7.92	8.00	10.11	.....	10.11	9.00	.83	.82	28.86	27.00	9
3.48	4.02	2.72	10.22	8.00	7 50	7.00	2.96	.....	*2.96	3.00	*1.24	1.44	23.38	22.00	8
4.45	3.89	1.71	10.05	9.00	8.34	8.00	5.27	.....	5.27	6.00	.88	.41	24.55	15.50	60
4.92	3.78	1.95	10.65	9.00	8.70	8.00	2.44	.....	2.44	2.00	.36	.29	16.18	16.00	7
5.59	2.36	1.32	9.27	7.50	7.95	6.50	5.16	.....	5.16	4.50	*1.55	1.65	27.18	24.00	10
9.35	1.60	1.99	11.54	9.00	9.55	8.00	4.95	.....	*4.95	7.00	*2.29	2.47	32.88	34.00	82
5.79	4.88	2.63	*13.30	15.00	10.67	10.00	1.78	.....	1.78	1.50	*1.51	2.06	27.12	25.00	1274
3 54	4.27	5.56	*12.37	16.00	7.81	7.00	2.83	.....	2 83	1.50	*2.19	2 47	29.65	30.00	1272
5.24	4.72	2.35	*12.31	14.00	*9.96	10.00	2.74	.....	*2.74	4.00	1.27	1.24	25.87	28.00	1273
6.27	5.01	1.88	*13.16	15.00	*11.28	14.00	1.76	.....	*1.76	2.50	*.75	.82	23.70	22.00	1275
2.89	5.28	.45	8.62	.....	8.17	8.00	5.28	.....	5.28	5.00	1.55	.....	26.82	23.50	1550
5.48	2.48	1.29	9.25	9.00	*7.96	8.00	7.00	.....	7.00	6.00	2.64	2.47	34.46	30.00	1111
5.61	2.52	1.15	9.28	9.00	8.13	8.00	5.50	.....	*5.50	6.00	2.48	2.47	32.35	28.00	624
														19.85	403
4.74	3.62	1.33	9.69	9.00	8.36	8.00	4.42	.....	4.42	4.00	1.00	.82	24.04	21.00	267
														.....	404
4.97	3.50	1.41	9.88	9.00	8.47	8.00	5.72	.....	*5.72	6.00	*2.36	2.47	32.24	30.00	1446
5.13	2.11	1.02	*8.26	9.00	*7.24	8.00	8.98	.....	8.98	7.00	*3.01	3.30	37.27	34.00	499
														33.00	1259
2.98	4.50	.74	8.22	8.00	7.48	7.00	1.07	.....	1.07	1.00	.83	.82	18.42	18.00	1484
7.14	2.11	.77	10.02	.....	9.25	8.00	8.07	.....	*8.07	10.00	1.82	1.65	32.67	29.00	975

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.
	M. P. Hubbard & Co., Baltimore, Md.		
844	Hubbard's Celebrated Bone Phosphate for General Use.	W. F. Slagle, Bloomsburg,	10.12
841	Hubbard's Excelsior Bone Phosphate,	W. F. Slagle, Bloomsburg,	8.16
669	Fish, Bone and Potash, Our New Discovery.	John Unger, Littlestown,	6.05
552	Hubbard's Harvest King for Wheat and Grass.	W. F. Slagle, Bloomsburg,	8.90
551	Hubbard's Old Economy, Best for the Money.	W. F. Slagle, Bloomsburg,	9.21
550	Hubbard's Special Potato and Tomato Fertilizer.	W. F. Slagle, Bloomsburg,	8.45
	International Seed Co., Rochester, N. Y.		
699	Grain and Grass Fertilizer,	E. D. Gardiner, New Milford,	12.57
700	Potato and Truck Manure,	E. D. Gardiner, New Milford,	11.50
	Jarecki Chemical Co., Sandusky, O.		
99	Fish and Potash Potato and Tobacco Food,	Clark Bros., Oil City,	14.25
100	Lake Erie Fish Guano,	Clark Bros., Oil City,	14.69
348	Number One Fish Guano,	Farmer's Co-operative Supply Co., Imperial.	15.05
1108	Raw Bone and Guano Mixture,	James Maust, West Salisburg,	10.97
	T. S. Kenderdine & Sons, Newtown, Pa.		
1307	Kenderdine's Potato Phosphate,	Hobensack Bros., Ivyland,	9.20
	Keystone Bone Fertilizer Co., Philadelphia, Pa.		
1244	Keystone Early Potato Manure,	Brandreth & Mattis, Hatboro,	10.81
1242	Grain and Grass Manure,	Brandreth & Mattis, Hatboro,	9.74
1243	Keystone Truck Guano,	Brandreth & Mattis, Hatboro,	10.14
1241	Keystone Vegetable Guano,	Brandreth & Mattis, Hatboro,	11.80
	Lancaster Chemical Co., Lancaster, Pa.		
1461	Flag Brand Superphosphate,	E. B. Ruhl & Son, Manheim,	7.59
984	General Crop Grower,	Jacob Denlinger, New Holland,	6.12
361	†Tobacco and Vegetable Fertilizer,	Geise & McBride, Elizabethtown,	7.94
982		Jacob Denlinger, New Holland,	
	D. Levan, Lebanon, Pa.		
610	Levan's General Crop Grower,	John E. Stover, Thompsontown,	6.99
1450	Levan's Special Potato and Tobacco Manure.	J. D. Sellers, Ephrata,	5.70
612	†Levan's Special Truck Fertilizer,	John E. Stover, Thompsontown,	5.40
1451		J. D. Sellers, Ephrata,	
611	Levan's Wheat and Grass Fertilizer,	John E. Stover, Thompsontown,	6.33
283	Levan's Wheat and Grass Special,	Henry B. Reighner, Pottstown,	12.45
	Lister's Agricultural Chemical Works, Newark, N. J.		
792	Corn No. 2 Fertilizer,	Henry Graham, Spring Borough,	10.41
69	Lister's "G" Brand,	Abraham Lauver, Middleburg,	10.97
101	Harvest Queen Phosphate,	Clark Bros., Oil City,	11.53
832	Lister's Potato No. 2 Fertilizer,	R. D. Conover, Newtown,	9.34
72	Lister's Special Potato Fertilizer,	Abraham Lauyer, Middleburg,	12.35
588	Lister's Special Crop Producer,	Frank Douglass, Indiana,	11.95
461	Lister's Standard Pure Bone Super-Phos.,	A. W. Berkheiser, Auburn,	12.58
460	Lister's U. S. Phosphate,	A. W. Berkheiser, Auburn,	11.24
	Mapes Formula and Peruvian Guano Co., New York.		
124	Mapes Cereal Brand,	Hillis & Taggert, Norristown,	6.58
813	The Mapes Complete Manure "A" Brand,	H. S. Beidler, Doylestown,	7.72
122	Mapes Complete Manure for General Use,	Hillis & Taggert, Norristown,	11.44
123	Mapes Corn Manure,	Hillis & Taggert, Norristown,	7.10
181	Mapes Economical Potato Manure,	John L. Nisley, Middletown,	8.34
183	Mapes General Crop Brand,	John L. Nisley, Middletown,	7.40

†Composite sample.

LIZERS—Continued.

Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds. (Water Soluble.)				Nitrogen in 100 lbs.				
			Total.		Available.				Total.						
Soluble in water.	Reverted.	Insoluble.	Found.	Guaranteed.	Found.	Guaranteed.	Present as muriate.	Present as sulphate.	Found.	Guaranteed.	Found.	Guaranteed.	Computed commercial value of 2,000 pounds at Department rating. (See p. 19.)	Selling price of 2,000 pounds at the point of selection.	Sample number.
3.80	5.67	1.32	10.79	9.00	9.47	8.00	2.61	.....	2.61	2.00	*1.62	1.65	26.26	25.00	844
3.45	6.04	.89	10.38	9.00	9.49	8.00	2.37	.....	2.37	2.00	.88	.82	22.34	20.00	841
4.33	2.09	.64	7.06	7.00	6.42	6.00	1.36	.....	1.36	1.00	.69	.21	16.96	13.50	669
5.94	3.97	.59	10.50	10.00	9.91	9.00	2.92	.....	*2.92	3.00	1.53	.82	26.70	21.00	552
3.98	3.31	.77	*8.06	9.00	*7.29	8.00	2.38	.....	2.38	2.00	.99	.41	20.49	18.00	551
6.12	.99	1.15	8.26	8.00	7.11	7.00	5.53	....	5.53	5.00	1.97	1.65	28.62	25.00	559
7.19	3.91	1.50	12.60	11.00	11.10	10.00	2.25	.....	*2.25	2.50	1.34	1.24	36.91	25.00	699
4.77	4.13	.94	9.84	9.00	8.90	8.00	9.71	.....	9.71	7.00	1.69	1.24	33.31	16.00	700
3.84	4.23	1.19	9.26	9.00	8.07	8.00	3.59	.....	*3.59	4.00	.88	.82	22.23	26.00	99
3.71	5.32	.81	9.84	9.00	9.03	8.00	2.23	.....	*2.23	2.50	*1.14	1.24	22.96	26.00	100
4.01	4.72	.80	9.53	9.00	8.73	8.00	1.57	.....	*1.57	2.00	*.92	1.03	20.73	21.50	348
4.46	3.83	8.49	16.78	.....	*8.29	16.00	1.07	.....	1.07	1.00	1.66	1.65	27.18	26.00	1108
5.64	2.85	1.81	10.30	9.00	8.49	7.00	10.51	.....	10.51	10.00	1.69	1.65	34.21	30.00	1307
4.85	3.33	1.41	9.59	8.00	8.18	7.00	8.93	1.13	10.06	9.00	*2.72	2.88	38.26	31.00	1244
1.16	5.83	1.80	8.79	8.00	*6.99	7.00	2.23	.....	2.23	1.00	1.17	.82	20.92	17.50	1242
1.69	3.32	2.18	7.19	7.00	*5.01	6.00	2.49	.....	2.49	2.00	4.05	3.30	33.55	28.00	1243
1.49	5.22	1.55	8.26	7.00	6.71	6.00	7.08	.....	7.08	6.00	2.14	1.65	30.39	25.00	1241
5.74	4.60	8.05	13.39	9.00	10.34	8.00	1.77	.....	*1.77	2.00	1.32	1.24	25.92	22.00	1461
4.71	3.18	2.79	11.68	9.00	7.89	8.00	.53	5.16	*5.69	6.00	*1.55	1.65	29.70	24.00	984
4.23	3.70	3.26	11.19	8.50	7.93	7.50	1.60	4.37	*5.97	7.00	2.07	2.06	32.00	30.00	361
														30.00	982
1.34	6.24	1.15	*8.73	9.00	*7.58	8.00	2.25	.....	2.25	1.00	1.03	.82	20.79	16.75	610
3.14	4.13	1.57	*8.84	9.00	*7.27	8.00	5.87	.....	*5.87	6.00	*1.51	1.65	26.76	22.00	1450
1.66	4.75	1.34	*7.75	8.00	*6.41	7.00	9.28	.....	*9.28	10.00	*1.36	1.65	28.30	28.00	612
														24.50	1451
1.74	4.97	2.80	9.51	9.00	*6.71	8.00	5.02	.....	5.02	5.00	*.73	.82	21.99	19.75	611
.85	5.51	3.81	10.17	9.00	*6.36	8.00	1.97	.....	1.97	1.50	2.12	1.24	25.51	21.00	283
6.50	4.03	1.84	12.37	11.00	10.53	10.00	4.05	.....	4.05	4.00	2.07	1.65	31.63	26.00	792
4.90	3.43	1.18	*9.51	10.00	8.33	8.00	4.01	.....	4.01	4.00	.91	.82	23.07	.....	69
5.78	3.86	1.80	11.44	10.00	9.64	9.00	2.23	.....	2.23	2.00	1.42	1.24	25.57	26.00	101
6.83	3.60	2.04	12.47	11.00	10.43	10.00	4.30	.....	4.30	4.00	2.07	1.65	31.92	.....	832
4.90	3.29	1.47	9.66	9.00	8.19	8.00	3.02	.....	3.02	3.00	1.65	1.65	25.72	.....	72
3.20	3.78	1.45	8.43	8.00	*6.98	7.00	1.18	.....	1.18	1.00	1.66	.82	22.39	20.00	588
5.81	3.49	2.66	11.96	11.00	9.30	9.00	2.17	.....	2.17	2.00	2.65	2.47	31.65	26.00	461
4.08	4.02	2.25	10.35	9.00	8.10	8.00	2.02	.....	2.02	2.00	1.40	1.03	23.65	19.00	460
.73	4.64	3.11	8.48	8.00	*5.37	6.00	3.27	.....	3.27	3.00	1.95	1.65	24.73	29.00	124
1.22	8.31	5.80	15.33	12.00	*9.53	10.00	3.20	.....	3.20	2.50	2.87	2.47	34.94	32.00	813
.60	5.43	4.32	10.35	10.00	*6.03	8.00	4.42	.....	4.42	4.00	3.31	3.30	38.80	37.00	122
.76	5.99	3.76	10.51	10.00	*6.75	8.00	6.27	.....	6.27	6.00	2.64	2.47	33.00	34.00	123
.87	3.65	2.41	6.93	6.00	4.52	4.00	.67	7.70	8.37	8.00	3.72	3.30	38.68	39.00	181
.86	6.06	2.22	*9.14	10.00	*6.92	8.00	2.48	.....	2.48	2.00	1.74	1.65	24.21	29.00	183

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.
121	Mapes Potato Manure,	Hillis & Taggert, Norristown,	5.90
182	Mapes Vegetable Manure or Complete Manure for Light Soils.	John L. Nisley, Middletown,	8.03
	D. B. Martin Co., Philadelphia, Pa.		
316	Martin's Abattoir Products, One, Eight Four.	Ira Blough, Bills,	10.94
1098	Abattoir Products (Gilt Edge Potato Manure).	H. Brinker, Export,	7.60
1334	Bull's Head Fertilizer for Cotton and Tobacco.	J. H. Thompson, Harmarville,	14.95
1331	†Claremont Vegetable Grower,	J. H. Thompson, Harmarville,	10.61
1516		The Eli Sell Co., Greensburg,	
1104	†Corn and Cereal Special,	The Eli Sell Co., Greensburg,	10.55
356		S. H. Purdy, Murdocksville,	
1192		Brillinger & Swartz, Emigsville,	
500	†Martin's One, Eight, Four,	W. J. Bowman, Lebanon,	11.15
202		Levi Long, Trent,	
667		A. P. Tippy, Littlestown,	
35	Martin's Special Potato Manure,	Wilson & Mendenhall, Toughkenamon.	10.68
1339	Sure Grower,	A. E. Walker, Burgettstown,	11.64
	McCalmont & Co., Bellefonte, Pa.		
1255	McCalmont & Co's Champion Ammoniated Bone Superphosphate.	McCalmont & Co., Bellefonte,	7.15
	Michigan Carbon Works, Detroit, Mich.		
116	General Crop Fertilizer,	Davis & Hyde, Spartainsburg,	14.68
118	Red Line Complete Manure,	Davis & Hyde, Spartainsburg,	12.04
	Miller Fertilizer Co., Baltimore, Md.		
455	Harvest Queen Phosphate,	R. J. Gordon & Son, Markelville,	6.38
640	Club Phosphate,	P. C. Smith, East Berlin,	6.64
527	Hustler Phosphate,	J. W. Painter & Co., Lewisburg,	7.65
46	Potato and Vegetable Grower,	Miller T. Harkins, Hickory Hill,	7.04
854	Standard Phosphate,	H. B. Low & Son, Orangeville,	6.10
	Willis L. Meyers, Doylestown, Pa.		
1283	Gilt Edge Mixture,	Willis L. Myers, Doylestown,	7.67
	Nassau Fertilizer Co., New York.		
489	Common Sense Potato Manure,	J. A. Becker, Avon,	10.16
225	General Favorite,	Edwin Wolf, Pine Grove,	9.59
229	Gladiator Truck and Potato,	Edwin Wolf, Pine Grove,	10.90
227	Old Hickory,	Edwin Wolf, Pine Grove,	7.70
228	Royal Mixture,	Edwin Wolf, Pine Grove,	9.95
226	Special Potato Fertilizer,	Edwin Wolf, Pine Grove,	8.98
230	Plow Brand,	Edwin Wolf, Pine Grove,	11.17
231	Wheat and Grass Grower,	Edwin Wolf, Pine Grove,	10.85
	Ohio Farmer's Fertilizer Co., Columbus, O.		
773	Ammoniated Bone and Potash,	A. A. Greenlee, Cambridge Springs,	10.17
1324	Ammoniated Bone and Potash,	Wesley Walton, Beaver,	12.75
1323	Corn, Oats and Wheat Fish Guano,	Wesley Walton, Beaver,	11.33
774	Excelsior Guano,	A. A. Greenlee, Cambridge Springs,	10.65
1338	General Crop Fish Guano,	B. F. McClure & Bro., Burgettstown,	11.50
	Oxford Packing Works, Oxford, Pa.		
1298	O. P. W. No. 2,	Wm. Housen, Oxford,	9.63
1299	O. P. W. No. 4,	Wm. Housen, Oxford,	12.11
	Patapsco Guano Co., Baltimore, Md.		
431	Coon Brand Guano,	Andrew Richel, Meyersdale,	14.00
188	Coon Brand Guano,	J. O. S. Burkholder, Hummelstown,	12.79
189	Patapsco Corn and Tomato Fertilizer,	J. O. S. Burkholder, Hummelstown,	12.70
330	Patapsco Corn and Tomato Fertilizer,	J. J. Lehman, Holsopple,	12.95

†Composite sample.

LIZERS—Continued.

Phosphoric Acid in 100 Pounds.							Potash In 100 Pounds. (Water Soluble.)				Nitrogen in 100 lbs.		Computed commercial value of 2,000 pounds at Department rating. (See p. 19.)	Selling price of 2,000 pounds at the point of selection.	Sample number.
Soluble in water.	Reverted.	Insoluble	Total.		Available.		Present as muriate.	Present as sulphate.	Total.						
			Found.	Guaranteed.	Found.	Guaranteed.			Found.	Guaranteed.	Found.	Guaranteed.			
1.59	5.30	2.06	*8.95	9.00	*6.89	8.00	6.13	1.27	7.40	6.00	4.11	3.71	40.98	39.00	121
1.07	5.45	1.85	8.37	8.00	6.52	6.00	.93	6.41	7.34	6.00	5.80	4.94	49.63	43.00	182
2.42	5.73	.92	9.07	.....	8.15	8.00	3.90	.....	*3.90	4.00	.94	.82	22.59	18.00	316
4.11	3.21	1.73	9.05	.....	7.32	7.00	9.37	.....	*9.37	10.00	*2.46	2.47	35.22	35.00	1098
5.14	3.95	.97	10.06	.....	9.09	8.00	2.84	.....	*2.84	3.00	*2.07	2.47	28.30	28.00	1334
3.39	4.16	3.18	10.73	.....	7.55	7.00	5.05	.....	5.05	5.00	2.53	2.47	32.20	30.00	1331
														28.00	1516
3.95	3.90	3.34	11.19	.....	*7.85	8.00	2.07	.....	2.07	2.00	1.80	1.65	25.90	24.00	1104
														.....	356
														22.00	1192
4.21	3.57	2.58	10.36	.....	*7.78	8.00	4.61	.....	4.61	4.00	.88	.82	23.65	20.00	500
														19.00	202
														22.00	667
3.81	3.35	2.73	9.89	.....	*7.16	8.00	4.85	.....	*4.85	5.00	.96	.82	23.53	22.50	35
5.16	4.61	.74	10.51	.....	9.77	8.00	1.38	.....	1.38	1.00	1.04	.82	22.51	21.50	1339
6.15	2.12	1.28	*9.55	10.00	8.27	8.00	4.43	.....	4.43	4.00	1.75	1.65	27.82	24.00	1255
5.01	4.27	1.01	10.29	9.00	9.28	8.00	4.28	.....	4.28	4.00	.91	.82	24.34	22.50	116
3.25	4.79	1.84	9.88	8.00	8.04	7.00	1.31	.....	1.31	1.00	.93	.82	20.38	19.50	118
4.69	4.36	1.02	10.07	.....	9.05	.....	2.68	.....	2.68	.....	1.25	.....	24.14	20.50	455
5.13	3.14	.84	9.11	.....	8.27	.....	1.98	.....	1.98	.....	.60	.....	19.33	16.00	640
2.40	5.97	.66	*9.03	9.50	8.37	8.00	1.07	.....	1.07	1.00	.89	.82	19.57	19.00	527
5.62	2.80	1.05	*9.47	9.50	8.42	8.00	3.28	.....	*3.28	4.00	1.98	1.65	27.85	26.00	46
5.46	2.49	1.94	9.89	9.50	*7.95	8.00	3.10	.....	3.10	3.00	2.66	2.47	30.79	24.50	854
7.52	.95	.56	9.03	.....	8.47	7.00	6.77	.....	6.77	5.00	.95	.82	26.32	24.00	1283
5.48	2.75	1.20	9.43	9.00	8.23	8.00	3.94	.....	*3.94	4.00	1.74	1.65	27.20	25.00	489
3.18	5.06	.79	9.03	9.00	8.24	8.00	4.41	.....	4.41	4.00	.89	.82	23.00	18.00	225
5.22	3.11	1.09	9.42	8.00	8.33	7.00	6.40	.....	*6.40	7.00	*2.85	3.30	35.07	35.00	229
2.95	6.27	1.48	*10.70	11.00	*9.22	10.00	8.94	.....	8.94	8.00	.99	.82	28.87	25.00	227
5.80	3.36	1.22	10.38	9.00	9.16	8.00	4.91	.....	*4.91	5.00	.83	.....	24.78	16.00	228
4.52	3.43	.97	*8.92	9.00	*7.95	8.00	9.96	.....	*9.96	10.00	1.86	1.65	33.25	29.00	226
3.64	4.44	.96	9.04	9.00	8.08	8.00	2.27	.....	2.27	2.00	1.68	1.65	24.70	22.50	230
5.27	3.29	.79	9.35	9.00	8.56	8.00	2.24	.....	2.24	2.00	.94	.82	21.62	18.00	231
1.40	7.02	2.88	11.30	.....	8.42	8.00	4.29	.....	4.29	4.00	*.64	.82	19.26	23.00	773
4.20	4.70	1.72	10.62	.....	8.90	8.00	2.16	.....	*2.16	4.00	*.47	.82	16.34	.....	1324
2.59	5.30	1.53	9.42	.....	*7.89	8.00	1.95	.....	*1.95	2.00	*.51	1.24	15.39	.....	1323
4.72	2.29	1.64	8.65	.....	*7.01	8.00	1.71	4.92	*6.63	7.00	*.60	.82	23.95	26.00	774
3.19	4.74	1.45	9.38	.....	7.93	7.00	1.28	.....	1.28	1.00	*.61	.82	18.36	22.00	1338
5.94	1.94	1.81	9.69	.....	*7.88	8.00	7.27	.....	7.27	6.00	*1.15	1.44	27.57	24.00	1298
8.13	2.06	.77	10.96	.....	10.19	10.00	3.32	.....	3.32	3.00	.47	.41	18.60	18.00	1299
5.24	3.44	1.19	*9.87	10.00	*8.68	9.00	2.91	.....	*2.91	3.00	.86	.82	22.14	20.00	431
5.66	3.09	1.54	10.29	10.00	*8.75	9.00	3.12	.....	3.12	3.00	.86	.82	22.63	20.00	188
5.32	3.25	1.98	*10.55	11.00	*8.57	9.00	2.00	.....	2.00	2.00	1.34	1.24	23.92	20.00	189
5.09	3.66	1.77	*10.52	11.00	*8.75	9.00	2.07	.....	2.07	2.00	1.33	1.24	24.04	21.50	330

*Constituent falls below guaranty.

Sample number	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.
922	Patapsco Grain and Grass Producer, ...	W. J. Diehl, Charlesville, ...	10.41
520	Patapsco Tobacco and Potash Fertilizer, ..	P. A. Baker, Vicksburg, ...	12.73
	The Pennsylvania Fertilizer Co., Buffalo, N. Y.		
343	Big Bonanza, ...	J. P. McConnell, Duluth, ...	11.28
344	Truck Manure, ...	J. P. McConnell, Duluth, ...	11.77
	Pennsylvania Ammonia and Fertilizer Works, Harrisburg, Pa.		
895	Dissolved Bone and Potash, ...	A. W. Carlisle, Harrisburg, ...	7.26
184	†Potato, Vegetable and Tobacco, ...	M. D. Ebersole, Middletown, ...	6.75
892		A. W. Carlisle, Harrisburg, ...	
	J. Douglass Perkins, Coatesville, Pa.		
1276	Perkin's Monarch Phosphate, ...	J. D. Perkins, Coatesville, ...	9.75
1277	Perkin's Special Bone Manure, ...	J. D. Perkins, Coatesville, ...	9.85
	Piedmont-Mt. Airy Guano Co., Baltimore, Md.		
245	Levering's Harvest Queen, ...	J. M. Hadesty & Son, Tamaqua, .	12.77
247	Levering's Standard, ...	J. M. Hadesty & Son, Tamaqua, ..	10.67
209	Insula Guano for All Crops, ...	C. H. Smucker, Friedens, ...	12.41
211	Pennsylvania Grain Grower, ...	C. H. Smucker, Friedens, ...	11.68
246	Penn'a Peidmont Potato Producers, ...	J. M. Hadesty & Son, Tamaqua, ...	9.08
248	Piedmont Royal Ammoniated Bone and Potash.	J. M. Hadesty & Son, Tamaqua, ...	7.56
981	Piedmont Special Farmer's Tobacco Guano,	Abram Hoover, New Holland, ...	5.35
	Pittsburg Provision and Packing Co., Pittsburg, Pa.		
992		W. C. Gall, Monaca, ...	
307	†Corn and Potato Fertilizer, ...	H. Rakin, Emlenton, ...	4.26
1063		J. M. Brown, Vandergrift, ...	
419		Peter Heffley, Somerset, ...	
95	†Keystone Fertilizer, ...	F. Baimyer & Co., Pittsburg, ...	5.30
991		W. C. Gall, Monaca, ...	
85	Lawn Fertilizer, ...	W. C. Beckert, Allegheny, ...	2.88
	Pollock Fertilizer Co., Baltimore, Md.		
753	Pollock's Ammoniated Bone Phosphate, ...	H. M. Owen & Co., Lewistown, ...	12.43
1105	Pollock's Superior Corn and Tomato Fertilizer.	Norman Keim, Elklick, ...	11.64
2	Pollock's Crop Invigorator, ...	Harvey Spencer, Cochranville, ...	8.93
1	Pollock's Special Potato and Tobacco Fertilizer.	Harvey Spencer, Cochranville, ...	10.69
20	Pollock's Superior Corn and Tomato Fertilizer.	D. C. Windle, West Chester, ...	9.83
	Ramsburg Fertilizer Co., Frederick, Md.		
658	Old Virginia Compound, ...	Nelson Study, Littlestown, ...	9.88
	Rasin-Monumental Co., Baltimore, Md.		
563	Rasin's National Crop Compound, ...	D. J. Davis, Ebensburg, ...	9.79
757	Rasin's Empire Guano, ...	J. H. & S. E. Weber, Oak Hall Station.	10.73
169	Rasin's General Tobacco Grower, ...	Elias S. Brubaker, Richland, ...	8.64
621	Rasin's Irish Potato Special, ...	W. W. Book, Port Royal, ...	4.35
443	Rasin's I. X. L. Fertilizer, ...	H. L. Tressler, Newport, ...	10.19
224	Rasin's National Crop Compound, ...	Edward Spancake, Pine Grove, ...	9.63
54	Rasin's Special Fish and Potash Mixture,	Isaac Shirey, McClure, ...	7.11
171	Rasin's Wheat, Corn and Oats Mixture, ..	Elias S. Brubaker, Richland, ...	11.82
53	Rasin's William Penn Crop Grower, ...	Isaac Shirey, McClure, ...	10.20
170	Rasin's X. X. X. Fertilizer, ...	Elias S. Brubaker, Richland, ...	10.21
	Reading Bone Fertilizer Co., Reading, Pa.		
397		John Merkel, Hamburg, ...	
139	†Farmer's Bone and Potash for Corn, Grain and Grass.	W. K. Heebner, West Point, ...	9.24
1427		J. H. Kuntz, Shellville, ...	

†Composite sample.

LIZERS—Continued.

Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds. (Water Soluble.)				Nitrogen in 100 lbs.				
			Total.		Available.				Total.						
Soluble in water.	Reverted.	Insoluble.	Found.	Guaranteed.	Found.	Guaranteed.	Present as muriate.	Present as sulphate.	Found.	Guaranteed.	Found.	Guaranteed.	Computed commercial value of 2,000 pounds at Department rating. (See p. 19.)	Selling price of 2,000 pounds at the point of selection.	Sample number.
6.32	2.34	1.12	*9.78	10.00	8.66	8.00	3.87	.....	*3.87	4.00	.83	.82	23.20	.....	922
6.02	2.31	1.33	9.66	9.00	8.33	8.00	4.27	.....	4.27	4.00	1.74	1.65	27.68	24.00	520
2.21	4.85	1.04	*8.10	9.00	*7.06	8.00	5.21	.....	4.21	4.00	*.77	.82	20.77	19.50	343
2.68	4.06	1.41	*8.15	9.00	*6.74	8.00	4.18	.....	*4.18	6.00	*1.54	1.65	24.61	24.00	344
4.36	4.51	3.37	12.24	10.00	8.87	8.00	3.69	.....	*3.69	4.00	*1.49	1.65	27.27	28.00	895
5.10	4.49	1.28	*10.87	11.00	9.59	9.00	.67	8.40	9.07	9.00	1.68	1.65	35.08	32.00	184
														30.00	892
5.84	3.94	.91	10.69	.....	*9.78	10.00	6.54	.....	6.54	5.00	*1.43	1.50	29.95	27.00	1276
2.55	6.35	1.22	10.12	.....	8.90	8.00	1.44	.....	1.44	1.00	*.89	1.00	20.80	22.00	1277
4.70	3.27	.96	8.93	.....	*7.97	8.00	2.28	.....	*2.28	2.00	*.78	.82	20.35	22.00	245
4.90	3.01	.61	8.52	.....	*7.91	8.00	3.00	.....	3.00	3.00	1.77	1.65	25.48	24.00	247
6.71	1.86	.31	8.88	.....	8.57	7.00	2.02	.....	2.02	2.00	*.33	.41	15.28	20.00	209
5.26	2.04	.13	7.43	.....	7.30	7.00	6.00	.....	6.00	5.00	*.74	.82	22.81	22.00	211
4.64	2.63	1.49	8.76	.....	7.27	6.00	8.84	.....	*8.84	10.00	1.69	1.65	30.90	30.00	246
3.96	2.19	.95	7.10	.....	6.15	6.00	2.99	.....	*2.99	3.00	1.32	1.07	21.43	21.00	248
0.43	2.87	1.76	11.06	.....	9.30	8.40	4.24	.....	4.24	4.00	*2.23	2.47	31.47	.....	981
														24.50	992
3.67	4.22	3.01	*10.90	11.00	*7.89	9.00	3.12	.....	3.12	3.00	1.66	1.65	26.11	25.00	307
														25.00	1063
														18.00	419
4.11	4.73	3.37	12.21	11.00	*8.84	9.00	2.00	.77	2.77	1.50	*1.57	1.65	26.64	28.00	95
														21.00	991
1.53	4.44	9.89	15.86	.....	5.97	5.00	1.67	.....	1.67	1.50	*2.85	3.00	31.47	43.00	85
5.11	2.76	1.41	9.28	9.00	*7.87	8.00	2.04	.....	2.04	2.00	1.67	1.65	24.44	24.00	753
5.08	3.00	1.19	9.27	.....	8.08	.....	2.17	.....	2.17	.....	.98	.....	21.39	18.00	1105
3.62	4.64	.92	9.18	9.00	8.26	8.00	4.28	.....	4.28	4.00	.96	.82	23.31	20.00	2
4.57	3.79	.94	9.30	9.00	8.36	8.00	3.79	.....	*3.79	4.00	*1.64	1.65	26.42	23.00	1
3.86	4.46	.90	9.22	9.00	8.32	8.00	2.13	.....	2.13	2.00	.98	.82	21.38	20.00	20
4.09	5.27	3.29	12.65	11.00	9.36	9.00	2.19	.....	2.19	2.00	1.27	1.24	24.98	20.00	658
5.87	2.31	3.22	11.40	.....	8.18	.....	4.26	.....	4.26	.....	1.00	.....	24.75	22.00	563
5.90	2.04	3.28	11.22	9.00	*7.94	8.00	2.81	.....	2.81	2.00	1.65	1.65	26.24	.....	757
3.71	4.37	2.24	10.32	9.00	8.08	8.00	3.90	.....	3.90	3.00	1.71	1.65	26.97	22.56	169
6.01	2.55	1.31	9.87	8.00	8.56	7.00	.80	7.41	8.21	8.00	*3.18	3.30	40.42	.....	621
6.66	2.80	1.63	11.09	10.00	9.46	9.00	3.08	.....	3.08	3.00	1.04	.82	24.54	20.00	443
5.76	2.54	2.80	11.10	9.00	8.30	8.00	4.70	.....	4.70	4.00	.91	.82	24.63	24.00	224
5.55	3.22	2.59	11.36	7.00	8.77	6.00	2.93	6.21	*9.14	10.00	*2.62	3.30	39.01	33.00	54
5.24	3.41	1.49	10.14	9.00	8.65	8.00	2.85	.....	2.85	2.00	.67	.41	21.20	16.56	171
5.43	2.76	2.90	11.09	9.00	8.19	8.00	1.23	.....	1.23	1.60	.91	.82	21.01	18.00	53
6.34	2.76	2.07	11.17	9.00	9.10	8.00	4.31	.....	*4.31	5.00	*1.60	1.65	28.24	24.00	170
														17.00	397
3.64	5.32	1.89	10.85	10.00	8.96	8.00	3.85	.....	*3.85	4.00	.82	.82	23.28	20.00	139
														24.00	1427

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.
347	†Farmer's Bone and Potash for Corn,	S. G. Watchett, Clinton,	9.58
595	Grain and Grass.	H. T. Beatty, Saltburg,	
1286	Farmer's Union Fertilizer,	Sam'l W. Gross, Plumsteadville,	10.51
354	†Gilt Edge Potato and Tobacco Grower,	S. G. Watchett, Clinton,	7.32
1319		Reading Bone Fertilizer Co., Reading,	
728		A. M. Gehman, Macungie,	
593	†Gilt Edge Potato and Tobacco Grower,	H. T. Beatty, Saltsburg,	7.09
943		E. & G. Brook, Birdsboro,	
503		J. M. Groh, Lickdale,	
346	†Never Fail Crop Grower,	S. G. Watchett, Clinton,	6.41
592		H. T. Beatty, Saltsburg,	
590		H. T. Beatty, Saltsburg,	
355	†Reading Bone Special for All Crops,	S. G. Watchett, Clinton,	9.35
730		A. M. Gehman, Macungie,	
594	†Schuylkill Valley Favorite for Corn and	H. T. Beatty, Saltsburg,	7.08
940	Oats.	S. Schlegal, Fleetwood,	
591	†Tobacco and Truck Special,	H. T. Beatty, Saltsburg,	6.73
1459		B. H. Hershey, Manheim,	
	M. N. Risser, Elizabethtown, Pa.		
363	Risser's Grain and Grass Grower,	M. N. Risser, Elizabethtown,	10.98
365	Risser's Special Potato and Tobacco Manure.	M. N. Risser, Elizabethtown,	8.19
	Schaal-Sheldon Fertilizer Co., Erie, Pa.		
1079	Farmer's Favorite,	P. A. Drain, Sarver,	12.19
93	Guano,	I. W. Scott & Co., Pittsburg,	9.70
94	†Trucker's Manure,	I. W. Scott & Co., Pittsburg,	11.60
1086		G. R. Leslie, Arnold,	
	The Scott Fertilizer Co., Elkton, Md.		
174	Scott's Corn and Oats Grower,	Elias S. Brubacher, Richland,	11.95
175	Scott's Potato Grower,	Elias S. Brubacher, Richland,	8.49
479	Sure Growth Superphosphate,	D. R. Stein, Orwigsburg,	9.45
480	Scott's Potato Manure,	D. R. Stein, Orwigsburg,	6.66
1311	Scott's Sure Growth Compound,	Hobensack Bros., Ivyland,	8.39
	M. L. Shoemaker & Co., Philadelphia, Pa.		
281	†Good Enough Superphosphate,	J. W. Isett, Royersford,	9.90
472		Jonas Kunkle, McKeansburg,	
222	Special 10 Per Cent. Potato Fertilizer No. 1,	Aaron Spittler, Pine Grove,	8.15
473		Jonas Kunkle, New Ringgold,	
178	†Swift Sure New Jersey Special for Oats,	S. Z. Gettel, Myerstown,	8.05
491		Aaron Bicksler, Fredericksburg,	
806		Horace Michiner, Doylestown,	
126	Swift Sure Phosphate for General Use,	Hillis & Taggert, Norristown,	9.15
191		J. B. Shaffer, Swatara,	
125	†Swift Sure Special 10 Per Cent. Potato	Hillis & Taggert, Norristown,	8.92
471	Fertilizer No. 2.	Jonas Kunkle, New Ringgold,	
223	Swift Sure Superphosphate for General Use	Aaron Spittler, Pine Grove,	8.81
25	Swift Sure Superphosphate for Potatoes,	M. L. Shoemaker & Co., Berwyn,	9.35
127	Swift Sure Twenty-three Dollar Phosphate,	Hillis & Taggert, Norristown,	5.85
	Chas. A. Sickler Bros., Wilkes-Barre, Pa.		
696	†Empire Phosphate,	S. D. Warriner, Montrose,	8.93
862		Ellis Eves & Bro., Millville,	
1539	Graves Potato and Tobacco Manure,	M. M. Werline, Liberty,	9.35
713	†King Phosphate,	M. McVicar, Hopbottom,	6.40
864		Ellis Eves & Bro., Millville,	
863	Peerless Phosphate,	Ellis Eves & Bro., Millville,	9.47
712	Special Manure for Potatoes and Vegetables.	M. McVicar, Hopbottom,	10.98
	F. A. Simons, Cornwells, Pa.		
1288	Farmer's Favorite High Grade Phosphate Potato Grade.	Frank A. Simons, Cornwells,	6.89
1287	Farmer's Favorite High Grade Phosphate for Truck and Corn.	Frank A. Simons, Cornwells,	6.20

†Composite sample.

LIZERS—Continued.

Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds. (Water Soluble.)				Nitrogen in 100 lbs.		Computed commercial value of 2,000 pounds at Department rating. (See p. 19.)	Selling price of 2,000 pounds at the point of selection.	Sample number.
Soluble in water.	Reverted.	Insoluble.	Total.		Available.		Present as muriate.	Present as sulphate.	Total.						
			Found.	Guaranteed.	Found.	Guaranteed.			Found.	Guaranteed.	Found.	Guaranteed.			
3.2	.4	.2	10.0	10.0	8.4	8	.6*	.....	*3.4	..	.6		5.10	5.0	347
														5.00	595
4.33	5.2	1.2	10.8	.....	9.59	..	3.4	....	7.4	...	1.5	.	1.35	12.4	1286
3.70	4.1	1.9	9.7	9.00	7.8	7.0	..	0.56	*9.5	9.0	1.6	.6	3.85	19.40	354
														5.0	1319
														8.00	728
3.32	4.4	.88	9.6	9.0	7.7	7.0	.6	3.49	*9.1	9.00	1.7	.6	3.28	1.00	593
														5.00	943
														8.00	503
2.17	3.0	.73	10.9	10.00	8.1	8.4	-	.....	1.2	.0	.7	-	0.71	7.0	346
														3.00	592
														10.00	590
3.78	4.8	.8	10.4	9.00	8.5	7.1	8	.94	5.7	4.0	1.5	1	3.92	4.00	355
														1.0	730
1.9	.9	.4	10.3	9.0	7.8	7.1	7	....	*1.7	.0	.7		5.73	2.0	594
														8.0	949
3.40	1.7	.8	9.7	8.0	7.8	7.		7.87	8.8	0	1.6	1.	2.95	9.00	591
														0.0	1459
4.2	.2	.7	9.0	.....	7.4	4	4	.....	*4.6	0	.9		1.07	9.00	363
4.3	2.2	.4	8.3	.....	6.7	4	4	....	10.1	0.0	3.6		3.28	9.0	365
4.7	.3	.5	10.1	9.0	8.6	4	1	....	3.1	2.0	1.1	.8	3.85	4.00	1079
4.0	.8	.7	10.9	9.0	9.2	8	2	....	4.2	3.0	.6		3.42	5.00	93
5.4	.7	.3	11.5	9.00	0.1		2	.....	*5.3	3.0	1.7		1.09	5.0	94
														1.25	1086
8.5	.4	.7	10.9	....	10.1	8.4	1.9	.....	3.4	3.0	.6	.4	4.75	8.00	174
3.2	.7	.7	7.6	....	6.3	4	1.4	.....	*9.4	.0	1.7	.6	0.03	18.82	175
9.0	.4	.4	13.1	....	11.1	6	2.7	....	3.0	3.0	1.3	1.4	3.44	4.00	479
3.7	.2	.2	7.3	....	6.8		1.3	....	9.9		1.8		1.57	9.00	480
7.0	.4	.4	9.5	....	8.5	.4	1	....	7.1	7.0	1.2	1.2	3.15	13.00	1311
6.1	.4	.9	12.9	12.00	10.0	8	3.7	.....	3.7	1.0	2.2	1.6	2.06	15.00	281
														13.00	472
4.08	2.0	1.2	9.6	.....	7.3	..	4.2	5.00	9.2	..	3.6	....	1.97	13.00	222
														20.00	473
4.9	1.8	2	13.0	.....	8.8	8.0	2.40	.....	2.4	2.0	1.52	.8	6.36	20.00	178
														19.00	491
														20.00	806
6.4	3.1	1.7	14.1	14.0	10.2	10	4.9	.....	4.9	4.5	2.79	2.8	7.32	21.00	126
														31.00	191
3.9	1.6	1.7	11.4	.....	8.6	8.00	0.29	.....	10.29	0.0	2.27	2.0	6.99	29.00	125
														29.00	471
6.8	1.9	.9	14.6	14.00	9.7	9.00	1.8	.....	5.2	4.5	2.98	2.8	8.36	32.00	223
6.4	2.2	1.9	13.6	11.00	9.7	9.0	2.01	.....	8.0	7.0	2.8	2.8	0.00	32.00	25
2.2	2.2	1.6	12.1	8.00	7.4	4.0	2.15	.....	2.15	1.0	1.23	.8	3.26	23.00	127
2.6	2.2	1.4	*6.3	9.00	*4.8	8.00	2.03	.....	2.03	2.00	1.09	1.6	8.21	20.00	696
														22.00	862
2.8	2.6	1.3	7.8	.....	*5.5	8.00	2.9	.....	*2.9	3.0	*.9	1.5	9.77	26.00	1539
1.2	2.7	.6	5.7	.....	*4.1	8.0	1.81	.....	*1.81	2.00	*.63	.8	4.83	19.00	713
														18.00	864
1.5	2.2	1.1	5.0	.....	*3.9	7.00	2.70	.....	2.70	1.0	.59	.41	5.20	15.00	863
3.3	2.18	2.29	*7.7	8.00	*5.4	7.00	4.62	.....	*4.62	7.00	*1.26	2.47	2.69	34.00	712
4.6	2.44	2.91	9.9	9.00	7.0	7.00	5.30	.....	*5.30	6.00	*2.27	2.47	30.45	28.00	1288
1.8	3.35	4.08	9.2	8.00	*5.21	6.00	5.62	.....	5.62	3.50	*2.52	3.71	30.22	28.00	1287

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.
	H. G. Smyser, York, Pa.		
1163	Chicago Ammoniated Bone and Tankage, ..	Henry Linebaugh, Dover, ...	12.58
	Southern Fertilizer Co., York, Pa.		
366	Special Potato Grower, ...	D. G. Heisy, Elizabethtown, ...	11.58
1119	Special Potato Grower, ...	Oscar Coleman, Somerset, ...	12.21
	Standard Guano Co., Baltimore, Md.		
885	Fish Rock and Potash, ...	M. Gillis, Hughesville, ...	7.05
	Swift & Co., Chicago, Ill.		
340	Swift's Champion Wheat and Corn Grower,	R. G. Young's Sons, New Gallilee, ..	3.49
342	Swift's Complete Fertilizer, ...	R. G. Young's Sons, New Gallilee, ..	2.26
341	Swift's Onion and Potato and Tobacco, ...	R. G. Young's Sons, New Gallilee, ..	6.24
339	Swift's Superphosphate, ...	R. G. Young's Sons, New Gallilee, ..	6.74
	Taylor Provision Co., Trenton, N. J.		
1291	John Taylors Special Potato Fertilizer, ...	Jno. L. Hibbs, Bristol, ...	8.19
	I. P. Thomas & Sons Co., Philadelphia, Pa.		
1407	Improved Superphosphate, ...	Edward Shuey, Lickdale, ...	12.93
710	Normal Bone Phosphate, ...	E. D. Snyder, Hopbottom, ...	10.39
375	Thomas' Scientific Tobacco Grower, ...	H. S. Newcomber, Mt. Joy, ...	6.25
376	†Thomas' Wheat and Corn Fertilizer, ...	H. S. Newcomber, Mt. Joy, ...	11.13
186		John S. Engle, Hummelstown, ...	
392		S. C. Seidle, Hamburg, ...	
	James Thomas, Williamsport, Pa.		
1055	Thomas' Potato and Truck Manure, ...	F. E. Shoemaker, Granville Summit,	11.35
1054	Special Compound for Wheat, Oats, Corn and Grass.	F. E. Shoemaker, Granville Summit,	11.82
1056	Standard Bone Phosphate, ...	F. E. Shoemaker, Granville Summit,	12.29
	Trenton Bone Fertilizer Co., Trenton, N. J.		
799	Trenton High Grade Potato Fertilizer, ...	L. A. Howells, Morrisville, ...	9.24
800	Trenton Potato Manure, ...	L. A. Howells, Morrisville, ...	5.83
798	Trenton Corn Mixture, ...	L. A. Howells, Morrisville, ...	5.35
801	Trenton $33.00 Potato Manure, ...	L. A. Howells, Morrisville, ...	7.08
	Jacob Trinely, Linfield, Pa.		
1245	Raven Bone Phosphate, ...	Jacob Trinely, Linfield, ...	7.30
	F. W. Tunnell & Co., Philadelphia, Pa.		
288	†Ammoniated Dissolved Bone and Potash,	W. M. Gehman, Macungie, ...	8.44
32		Wilson & Mendenhall, Toughkenamon,	
835		Richard Jackson, Cochranville, ...	
31	F. W. Tunnell & Co. Complete Superphosphate.	Wilson & Mendenhall, Toughkenamon.	11.19
18	†Potato and Grain Manure, ...	Brinton & Worth, West Chester, ..	12.56
726		W. M. Gehman, Macungie, ...	
724	F. W. Tunnell & Co's Reseived Phosphate.	W. M. Gehman, Macungie, ...	8.65
14	†Royal Fish Guano, ...	Brinton & Worth, West Chester, ..	14.18
740		Jones & Paxon, Hatboro, ...	
727	F. W. Tunnell & Co's Royal Wheat Grower,	W. M. Gehman, Macungie, ...	10.40
17	†Special High Grade Potato Manure, ...	Brinton & Worth, West Chester, ..	11.70
723		W. M. Gehman, Macungie, ...	
15	Sweet and White Potato Manure, ...	Brinton & Worth, West Chester, ..	10.65
722	F. W. Tunnell & Co. Truckers H. G. Fish Guano.	W. M. Gehman, Macungie, ...	10.55
	Tuscarora Fertilizer Co., Baltimore, Md.		
1474	Big Four, ...	C. P. Swisher, Kirkwood, ...	10.05
1475	Tuscarora Fruit and Potato, ...	C. P. Swisher, Kirkwood, ...	6.89
1473	Tuscarora York State Special, ...	C. P. Swisher, Kirkwood, ...	4.06

†Composite sample.

LIZERS—Continued.

Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds. (Water Soluble.)				Nitrogen in 100 lbs.		Computed commercial value of 2,000 pounds at Department rating. (See p. 13.)	Selling price of 2,000 pounds at the point of selection.	Sample number.
			Total.		Available.				Total.						
Soluble in water.	Reverted.	Insoluble.	Found.	Guaranteed.	Found.	Guaranteed.	Present as muriate.	Present as sulphate.	Found.	Guaranteed.	Found.	Guaranteed.			
6.76	2.19	1.84	10.79	.....	8.95	8.00	3.16	.....	3.16	2.00	.86	.82	25.57	18.00	1163
3.21	4.18	1.64	9.03	.....	7.39	.....	4.05	.....	4.05	.....	1.45	.....	24.84	22.00	366
4.72	3.28	1.48	9.48	9.00	8.00	8.00	3.34	.....	*3.34	4.00	1.30	1.24	24.14	24.00	1119
3.95	2.78	1.35	8.08	6.00	6.73	5.00	.86	.....	.86	.50	.47	.21	13.32	19.00	885
1.16	9.46	3.38	14.00	.....	10.62	.....	2.07	.....	2.07	.....	1.92	.....	29.06	26.00	340
.71	6.98	2.00	9.69	.....	7.69	.....	.67	.84	1.51	.....	1.35	.....	22.09	20.00	342
5.04	4.28	2.67	11.99	.....	9.32	.....	.67	5.83	6.50	.....	1.69	.....	32.42	29.00	341
4.02	4.97	1.02	10.01	.....	8.99	.....	1.82	.....	1.82	.....	1.62	.....	24.80	22.00	339
3.98	4.95	.83	9.76	.....	*8.93	10.00	10.14	.....	10.14	10.00	2.07	2.06	35.38	28.50	1291
8.08	2.96	.51	11.55	11.00	11.04	10.00	1.80	.....	1.80	1.00	1.04	.82	24.56	20.00	1407
3.65	4.89	1.02	9.56	.....	8.54	8.50	2.02	.....	2.02	1.50	1.11	1.03	22.00	23.00	710
6.62	1.82	.69	9.13	9.00	8.44	8.00	2.53	3.20	*5.73	6.00	2.86	1.65	35.13	31.00	375
														21.00	376
4.97	4.52	1.07	10.56	10.00	9.49	9.00	2.53	.51	3.04	3.00	.86	.82	23.76	19.00	186
														20.00	392
5.48	2.96	.83	*9.27	12.00	8.44	8.00	4.45	.....	*4.45	5.00	2.01	1.65	28.95	28.00	1055
4.64	6.33	1.15	*12.12	13.00	10.97	9.00	1.66	.....	*1.66	2.00	1.04	1.03	24.19	24.00	1054
3.93	4.76	3.17	11.86	11.00	8.69	8.00	1.34	.....	1.34	1.00	.96	.82	21.85	21.00	1056
3.06	3.18	1.74	7.98	.....	6.24	6.00	10.41	.....	10.41	10.00	3.35	3.30	39.45	35.00	799
4.41	3.00	4.40	11.81	.....	*7.41	8.00	7.76	.....	7.76	7.00	1.70	1.65	31.30	27.00	800
2.83	4.70	4.22	11.75	.....	7.53	.....	3.26	.....	3.26	.....	1.54	.....	25.86	23.00	798
4.99	3.23	3.23	11.45	.....	8.22	8.00	10.44	.....	10.44	10.00	2.65	2.47	39.15	32.00	801
4.91	3.90	1.76	10.57	10.00	*8.81	9.00	2.88	.....	*2.88	3.00	1.31	1.24	24.69	21.00	1245
														19.00	288
.94	5.67	1.45	*8.06	10.00	*6.61	9.00	2.19	.....	2.19	2.00	.47	.21	14.26	19.50	32
														.....	835
7.01	4.90	5.19	17.10	9.00	11.91	8.00	3.78	.....	3.78	1.75	2.55	.82	37.02	22.00	31
.94	7.32	1.56	9.82	8.00	8.26	7.00	4.98	.....	4.98	4.00	*1.58	1.65	27.14	26.00	18
														25.00	726
.84	5.39	1.28	7.51	7.00	6.23	6.00	2.27	.....	2.27	1.00	.67	.41	17.35	18.00	724
1.93	7.40	1.91	11.24	9.00	9.33	7.00	4.77	.....	4.77	3.00	2.20	1.85	31.32	26.00	14
														27.00	740
.77	6.13	2.56	*9.46	10.00	*6.90	9.00	1.78	.....	1.78	1.00	.90	.82	19.44	23.00	727
5.88	3.56	1.40	10.84	8.00	9.44	6.00	9.85	.....	*9.85	10.00	2.82	2.47	39.81	32.00	17
														32.00	723
1.22	5.92	1.53	8.67	8.00	7.14	7.00	8.13	.....	8.13	8.00	2.15	1.65	31.86	30.00	15
1.70	3.52	2.15	7.37	7.00	5.22	5.00	2.17	.....	2.17	1.75	4.12	4.12	33.62	32.00	722
4.72	4.03	1.10	9.85	.....	8.75	.....	4.44	.....	4.44	.....	1.80	.....	28.34	27.50	1474
6.45	2.89	1.11	10.45	10.00	9.34	8.00	10.43	.....	10.43	10.00	1.92	1.65	36.06	27.00	1475
5.71	3.06	.45	*9.22	10.00	8.77	8.00	4.71	.....	4.71	4.00	.90	.82	23.98	19.50	1473

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.
	J. E. Tygert Co., Philadelphia, Pa.		
945	Golden Harvest Phosphate,	Jacob Young, Stormstown,	8.50
1047	Popular Phosphate,	J. W. Patterson, Columbia Cross Roads.	9.92
	Union Chemical Co., West Point, Pa.		
136	†Farmer's Special,	Joseph C. Johnson, Providence Sq.,	8.46
497		J. Swope, Crosskill Mills,	
266	Grain and Grass Grower,	John J. White, Lansdale,	8.25
137	†Potato and Celery Special,	Joseph C. Johnson, Providence Sq.,	7.25
1396		E. M. Wenger, Fredericksburg,	
	J. C. Walker & Sons, Gap, Pa.		
959	†Pride of Pequay, High Grade Phosphate,	J. C. Walker & Sons, Gap,	7.75
1542		Frank L. Musselman, Strasburg,	
960	†Pride of Pequay Phosphate,	J. C. Walker & Sons, Gap,	10.63
1543		Frank L. Musselman, Strasburg,	
	F. K. Walt Co., Reading, Pa.		
944	Calcine Bone Superphosphate,	Miller Bros., Birdsboro,	6.77
217	Clover and Potato,	M. A. McIlhenney, Pine Grove,	5.45
237	Walt's Special Clover and Potato Brand,	A. J. Fidler, Sec'y, Rock,	5.35
239	†Walt's Valid Bone Phosphate,	A. J. Fidler, Sec'y, Rock,	6.29
398		A. G. Shadle, Shoemakersville,	
462	Calcine Bone Phosphate (super),	Augustus Brinsinger, Auburn,	6.28
	Wengert & Gingrich, Jonestown, Pa.		
907	Keystone Dissolved Animal Bone Fertilizer,	John Wengert Jonestown,	6.54
	W. E. Whann & Co., William Penn, Pa.		
257	Chester Valley Economist Fertilizer,	Seligman & Co., Tamaqua,	9.57
259	†Whann's Chester Valley Fish and Potash	Seligman & Co., Tamaqua,	10.25
1439	Fertilizer.	J. A. Renninger, New Holland,	
1440	Whann's Chester Valley No. 2 Ammoniated superphosphate.	J. A. Renninger, New Holland,	8.33
738	Whann's Chester Valley Special Ammoniated superphosphate.	M. V. Detwiler, Oaks,	6.48
	The Robert A. Wooldridge Co., Baltimore, Md.		
39	Champion Giant Phosphate,	Franklin G. Evans, Kelton,	12.93
40	Fernwood Grange Mixture,	Franklin G. Evans, Kelton,	10.42
1179	Special Potato Fertilizer for Irish Potatoes,	C. A. Rost, Red Lion,	11.80
38	Triumph Pure Bone Phosphate,	Franklin G. Evans, Kelton,	11.54
	Wooldridge Fertilizer Co., Baltimore, Md.		
865	Wooldridge's Clover Leaf Crop Grower,	J. L. Reece & Co., Millville,	6.93
867	Old Hickory Phosphate,	J. L. Reece & Co., Millville,	7.58
868	Tiger Bone Stock Phosphate,	J. L. Reece & Co., Millville,	8.50
	The Wooldridge Orchilla Co., Baltimore, Md.		
164	Tiger Bone Stock Phosphate,	John Lambert, Lambertsville,	9.50
	York Chemical Works, York, Pa.		
1224	Dempwolf's Ammoniated Raw Bone,	Gochenour & Cook, Dillsburg,	7.82
1201	Dempwolf's Harvest Queen Fertilizer,	Gochenour & Cook, Dillsburg,	10.64
754		E. M. Harshleyer, Mattawanna,	
1485		Wm. J. Hess, Quarryville,	
56	Dempwolf's Potato Manure,	Sam'l Shirey, Beaver Spring,	9.22
1216	Dempwolf's Standard,	Gochenour & Cook, Dillsburg,	7.80
1256	Dempwolf's Standard Potash Fertilizer,	John H. Edmiston, Petersburg,	10.75
	Henry S. Zook, Elverson, Pa.		
965	No. 6 Dissolved Animal Bone Phosphate,	A. L. Houck, New Holland,	14.31
1266	No. 5 Pride of Chester Corn, Oats and Wheat Phosphate.	M. K. Stolfas, Belleville,	10.74

†Composite sample.

LIZERS—Continued.

Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds. (Water Soluble.)				Nitrogen in 100 lbs.		Computed commercial value of 2,000 pounds at Department rating. (See p. 19.)	Selling price of 2,000 pounds at the point of selection.	Sample number.
			Total.		Available.				Total.						
Soluble in water.	Reverted.	Insoluble.	Found.	Guaranteed.	Found.	Guaranteed.	Present as muriate.	Present as sulphate.	Found.	Guaranteed.	Found.	Guaranteed.			
6.25	2.65	1.15	10.05	9.00	8.90	8.00	2.87	.....	2.87	2.00	.57	.41	17.60	21.00	945
3.26	3.95	.87	8.08	8.00	7.21	7.00	1.28	.....	1.28	1.00	.99	.82	19.26	20.00	1047
5.36	2.80	.61	*8.77	9.00	8.16	8.00	4.77	.....	4.77	4.00	.96	.82	23.66	17.50	136
														22.00	497
6.07	3.01	1.50	10.58	9.00	9.08	8.00	6.36	.....	*6.36	8.00	*1.35	1.65	28.81	24.00	266
4.74	2.17	.78	*7.69	8.00	*6.91	7.00	4.53	5.83	10.36	10.00	1.72	1.65	32.79	27.00	137
														29.00	1396
7.20	1.16	.59	8.95	.....	8.36	7.00	1.47	5.97	*7.44	8.00	*2.41	2.47	35.06	29.00	959
														28.00	1542
9.94	1.64	.28	11.86	.....	11.58	10.00	.....	3.28	3.28	3.00	2.56	2.47	34.76	25.00	960
														25.00	1543
2.36	5.18	5.71	13.25	.....	*7.54	8.00	2.71	.....	2.71	2.00	*.80	1.65	22.27	25.00	944
2.04	4.05	4.24	10.33	.....	*6.09	8.00	7.44	.....	*7.44	8.00	*1.35	1.65	27.52	26.00	217
2.11	4.31	4.30	10.72	.....	*6.42	8.00	7.44	.....	*7.44	8.00	*1 21	1.65	27.13	28.00	237
2.32	5.31	3.61	11.24	.....	*7.63	8.00	4.85	.....	4.85	4.00	*.78	82	23.55	20.00	239
														18.00	398
2.17	4.34	5.17	11.68	.....	*6.51	8.00	4.45	.....	4.45	2.00	*.99	1.65	23.67	19.50	462
2.58	4.97	3.39	10.94	.....	*7.55	8.00	1.12	.....	1.12	1.00	*.86	1.00	19.82	18.00	907
5.23	3.31	.79	9.33	.....	8.54	8.00	2.50	.....	2.50	2.00	.69	.41	20.65	22.00	257
3.85	3.42	.83	8.11	.....	7.28	.....	4.68	.....	4.68	.....	1.49	.....	25.32	32.00	259
														25.00	1439
4.41	4.62	1.02	10.05	.....	9 03	.....	3.14	.....	3.14	.....	1.19	.....	24.31	23.00	1440
2.93	4.02	1.22	8.17	.....	6.95	.....	2.49	.....	2.49	... .	.86	.....	19.58	.....	738
6.01	3.03	1.33	*10.37	10.50	9.04	9.00	2.14	.....	2.14	2.00	.97	.82	22.40	21.00	39
4.52	4.12	.59	*9.23	9.50	8.64	8.00	4.13	3.06	*7.19	8.00	1.67	1.65	30.60	25.00	40
5.72	3.11	1.31	*10.14	10.50	*8.83	9.00	5.68	.....	5.68	5.00	1.77	1.65	29.71	25.00	1179
4.22	3.60	1.48	*9.30	10.00	*7.82	8.00	4.00	.....	4.00	4.00	1.53	1.24	25.76	24.00	38
4.02	4.52	.86	*9.40	9.50	8.54	8.00	2.59	.....	2.59	2.00	.57	.41	16.72	17.00	865
4.68	3.67	1.10	*9.45	9.50	8.35	8.00	2.46	.....	*2.46	2.50	1.00	.82	21.93	19.50	867
5.05	3.27	1.20	9.52	9.50	8.32	8.00	3.82	.....	*3.82	4.50	1.29	1.03	24.82	23.00	868
5.23	2.83	1.72	9.78	9.50	8.06	8.00	4.11	.....	*4.11	4.50	1.19	1.03	24.69	20.00	164
6.55	4.62	.69	11.86	11.00	11.17	10.00	2.00	2.11	4.11	4.00	2.41	1.65	33.93	25.50	1224
														19.25	1201
4.11	4.48	.61	9.20	8.50	8.59	8.00	1.81	.....	*1.84	2.00	.82	.82	20.29	17.50	754
														20.00	1485
3.95	1.85	.86	*6.66	7.00	*5.80	6.00	8.11	.....	8.11	7.00	.85	.82	24.01	25.00	56
3.01	4.99	.48	*8.48	9.00	8.00	8.00	5.14	.....	5.14	5.00	*1.43	1.65	26.04	24.00	1216
3.82	4.08	.57	*8.47	8.50	*7.90	8.00	3.37	.....	*3.37	4.00	*.80	.82	21.01	21.25	1256
2.96	5.40	1.02	9.38	9.00	8.36	8.00	3.76	.....	3.76	3.00	*1.13	1.24	23.77	.....	965
3.77	5.91	1.85	11.53	11.00	*9.68	10.00	3.34	.....	3.34	2.00	.62	.41	18.88	.....	1266

*Constituent falls below guaranty.

ROCK AND POTASH

Furnishing Phosphoric

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.
	American Agricultural Chemical Co., New York.	
199	Allen's Alkaline Bone Phosphate, ...	J. C. McMillen, Rockwood, ...
112	Big Crop Phosphate, ...	Union Coal and Supply Co., Union City, ...
414	Bradley's Alkaline Bone with Potash, ...	Jos. Rhoades, Somerset, ...
424	Canton-Chemical Soluble Bone and Potash,	J. D. Miller, Rockwood, ...
359	Crocker's Dissolved Bone and Potash, ...	S. E. Hood, Hookstown, ...
323	Detrick's Soluble Bone Phosphate and Potash.	Newton Gordon, Boswell, ...
313	Great Eastern Soluble Bone and Potash, ..	Alex. Trent, Coleman, ...
147	High Grade Dissolved Bone and Potash, ..	N. A. Blough, Holsopple, ...
680	Lazaretto Alkaline Dissolved Bone, ...	Lott Shoemaker, Windham, ...
548	Lazaretto Dissolved Bone and Potash, ...	G. Y. Mowrey, Grovania, ...
204	Lazaretto H. G. Dissolved Bone and Potash,	Gill Walker, Glade, ...
50	Moro Phillips Alkaline Bone Phosphate, ...	J. I. Goss, Lewistown, ...
530	North Western X. X. X. Alkaline Bone, ...	H. L. Linden, Milton, ...
145	Packer's Union Banner Wheat Grower, ...	N. A. Blough, Holsopple, ...
679	Read's Bone and Potash, ...	Lott Shoemaker, Windham, ...
336	Reese's High Grade Potash Mixture, ...	M. F. Silvis, Spring Church, ...
418	Reese's High Grade Potash Mixture, ...	Jos. Rhoades, Somerset, ...
215	Susquehanna H. G. Bone and Potash, ...	A. A. Miller, Somerset, ...
	Canton Chemical Branch, New York.	
242	Soluble Alkaline Bone, ...	Lewis Heffner, Pine Grove, ...
240	Soluble Bone Potash, ...	Lewis Heffner, Pine Grove, ...
	Cumberland Branch, New York.	
1351	Bone and Potash, ...	Hyde Bros., Shadeland, ...
	Detrick Branch, New York.	
637	Detrick's P. and B. Special Fertilizer, ...	Joseph Gockmaner, East Berlin, ...
	Moro-Phillips Branch, New York.	
495	Moro-Phillips Alkaline Bone Phosphate, ...	S. H. Donkel, Crosskill Mills, ...
	Packers Union Branch, New York.	
304	Banner Wheat Grower, ...	R. M. McDowell, Emlenton, ...
305	Wheat, Oats, and Clover, ...	R. M. McDowell, Emlenton, ...
	Susquehanna Branch, New York.	
437	High Grade Bone and Potash, ...	George E. Beaver, Millerstown, ...
	Tygert Allen Branch, New York.	
820	Tygert-Allen Star Soluble Bone and Potash,	Quincy Fretz, Bedminster, ...
	Wheeler's Branch, New York.	
466	Wheat and Clover Fertilizer, ...	Thomas Ebling, Auburn, ...
	Williams & Clark Branch, New York.	
440	Dissolved Bone and Potash, ...	B. F. Horting, Newport, ...
	Zell Branch, New York.	
442	Electric Phosphate, ...	B. F. Horting, Newport, ...
	Armour Fertilizer Works, Baltimore, Md.	
412	Armour's Phosphate and Potash No. 2, ..	Beerits & Sons, Somerset, ...
216	Phosphate and Potash No. 1, ...	Beerits & Sons, Somerset, ...
	Baltimore Pulverizing Co., Baltimore, Md.	
454	Penlman's Excelsior Fertilizer, ...	J. R. Gordon & Son, Markelville, ...
452	Special Spring Mixture, ...	J. R. Gordon & Son, Markelville, ...

†Composite sample.

FERTILIZERS.

Acid and Potash.

Moisture in 100 pounds.	Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds. (Water Soluble.)				Computed commercial value of 2,000 pounds at Department rating. (See p. 19.)	Selling price of 2,000 pounds at point of selection.	Sample number.
	Soluble in water.	Reverted.	Insoluble.	Total.		Available.		Present as muriate.	Present as sulphate.	Total.				
				Found.	Guaranteed.	Found.[1]	Guaranteed.			Found.	Guaranteed.			
16.50	7.09	3.27	1.01	11.37	11.00	10.36	10.00	2.29	.....	2.29	2.00	15.42	13.00	199
10.18	4.71	4.08	1.69	9.88	9.00	8.79	8.00	5.71	.....	5.71	5.00	17.52	19.00	112
9.95	7.51	2.25	.87	*10.63	11.00	*9.76	10.00	2.16	.....	2.16	2.00	14.84	15.00	414
11.34	6.76	3.26	1.48	11.50	11.00	10.02	10.00	2.25	.....	2.25	2.00	15.25	16.00	424
9.64	6.99	3.46	.73	11.18	11.00	10.45	10.00	2.24	.....	2.24	2.00	15.33	.....	359
10.80	6.31	3.73	.98	11.02	11.00	10.04	10.00	2.30	.....	2.30	2.00	15.09	14.00	323
12.33	6.40	3.73	.70	*10.83	11.00	*10.12	10.00	2.04	.....	2.04	2.00	14.86	15.00	313
12.08	7.54	3.96	.88	*12.38	13.00	*11.50	12.00	5.22	.....	5.22	5.00	19.22	18.00	147
12.70	10.74	2.97	.97	14.68	.....	13.71	.....	3.13	.....	3.13	.....	19.16	19.00	680
11.87	6.86	3.27	.48	*10.61	11.00	10.13	10.00	2.00	.....	2.00	2.00	14.72	.....	548
11.46	9.70	3.04	.72	13.46	13.00	12.74	12.00	5.20	.....	5.20	5.00	20.30	18.00	204
10.03	5.66	4.24	.64	*10.54	11.00	*9.90	10.00	2.45	.....	2.45	2.00	14.95	14.00	50
9.60	6.76	3.44	.81	11.01	11.00	10.20	10.00	5.14	.....	5.14	5.00	18.10	16.50	530
11.13	5.89	3.77	1.08	*10.74	11.00	*9.66	10.00	2.55	.....	2.55	2.00	15.06	14.50	145
10.61	7.59	3.08	2.09	12.76	11.00	10.67	10.00	2.34	.....	2.34	2.00	16.14	17.00	679
12.76	5.55	6.52	1.85	13.92	13.00	12.07	12.00	4.14	.....	*4.14	5.00	18.66	.....	336
12.78	7.37	3.90	1.54	12.81	.....	11.27	.....	4.81	.....	4.81	.....	18.85	17.00	418
10.95	7.93	3.35	1.28	*12.56	13.00	*11.28	12.00	.93	4.87	5.80	5.00	20.74	18.00	215
11.41	7.65	4.84	.52	13.01	13.00	12.49	12.00	2.85	.....	*2.85	3.00	17.41	16.60	242
11.69	5.19	5.43	.45	11.07	11.00	10.62	10.00	2.14	.....	2.14	2.00	15.02	14.50	240
9.49	4.72	5.41	.93	11.06	11.00	10.13	10.00	3.33	.....	3.33	3.00	16.00	.....	1351
11.10	8.41	3.48	1.03	*12.92	13.00	*11.89	12.00	3.47	.....	3.47	3.00	17.85	15.85	637
9.87	5.30	5.05	.64	*10.99	11.00	10.35	10.00	2.06	.....	2.06	2.00	14.82	15.00	495
12.74	5.55	5.96	1.11	12.62	11.00	11.51	10.00	2.00	.....	2.00	2.00	15.79	18.00	304
11.09	6.15	6.07	1.17	13.39	13.00	12.22	12.00	2.06	.....	2.06	.....	16.47	18.00	305
10.17	9.20	2.68	.72	*12.60	13.00	*11.88	12.00	5.35	.....	5.35	5.00	19.78	16.50	437
10.46	4.74	5.84	.61	11.19	11.00	10.58	10.00	2.21	.....	2.21	2.00	15.07	16.00	820
10.95	3.60	6.50	.99	11.09	11.00	10.10	10.00	2.19	.....	2.19	2.00	14.71	15.00	466
10.37	7.39	3.11	.54	11.04	11.00	10.50	10.00	2.07	.....	2.07	2.00	15.14	13.00	440
9.29	6.30	3.79	.79	*10.88	11.00	10.09	10.00	2.79	.....	2.79	2.00	15.57	13.00	442
10.27	4.79	3.10	.79	*8.68	10.00	*7.89	8.00	5.45	.....	5.45	5.00	16.51	17.50	412
9.99	8.15	2.33	.71	*11.19	12.00	10.48	10.00	2.28	.....	2.28	2.00	15.55	16.50	216
8.64	2.22	7.85	1.28	11.35	.....	10.07	10.00	1.68	.....	*1.68	2.50	14.11	16.50	454
10.30	5.64	5.65	.61	11.90	.....	11.29	8.00	2.57	.....	2.57	1.00	16.04	14.00	452

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.
	Baugh & Sons Co., Philadelphia, Pa.	
660	Baugh's 12 and 5 Phosphate and Potash, ..	Nelson Study, Littlestown, ...
545	†Baugh's Soluble Alkaline Superphosphate,	Boettinger & Dietz, Danville, ...
433		Kipp & Moore, Millerstown, ...
758		Foreman & Smith, Centre Hall, ...
	Berger Bros., Easton, Pa.	
1237	Peerless Phosphate, ...	John S. Osterbrook & Co., Easton, ...
	A. D. Birely & Son, Ladiesburg, Md.	
1155	Birely's High Grade Bone and Potash, ...	J. C. Birely, New Oxford, ...
1156	Birely's High Grade Bone and Potash, ...	J. C. Birely, New Oxford, ...
	Bowker Fertilizer Co., Boston, Mass.	
396	Bowker's Golden Harvest Fertilizer, ...	H. R. Spayd, Hamburg, ...
293	Empire State Bone and Potash, ...	Kernochan & Co., Titusville, ...
1375	Superphosphate with Potash, ...	A. E. Campbell, Shunk, ...
	S. B. Brodbeck, Brodbeck, Pa.	
651	Brodbeck's Alkaline, ...	D. M. Frey & Shaffer, Hanover, ...
	Buffalo Fertilizer Co., Buffalo, N. Y.	
674	Bone and Potash	Frank Buttolph, Windham, ...
522	Extra Bone and Potash, ...	John Wingert, Lewisburg, ...
298	General Crop, ...	B. Corwin, Pleasantville, ...
	Coe-Mortimer Co., New York.	
1602	E. Frank Coe's Rural New Yorker, ...	Rohrbaugh & Stambaugh, Nashville, ...
	Josiah Cope & Co., Baltimore, Md.	
956	†Soluble Bone and Potash, ...	Jones Eavenson, Christiana, ...
195		Hanibal Martz, Barondale, ...
1296		O. W. Shortlidge & Co., Lincoln Univ'ty,
	Jas. G. Downward Co., Coatesville, Pa.	
1284	All Crop Bone Fertilizer, ...	N. T. Sassaman, Ottsville, ...
1285	Soluble Bone and Potash, ...	N. T. Sassaman, Ottsville, ...
	Eureka Fertilizer Co., Perryville, Md.	
509	Alkaline Bone and Potash, ...	M. C. Catherman, Millmont, ...
	W. S. Farmer & Co., Baltimore, Md.	
451	B. and P. Phosphate, ...	J. L. Ritter & Son, Newport, ...
	Griffith & Boyd Co., Baltimore, Md.	
57	X. X. Potash Manure, ...	J. B. Ewing, Beaver Springs, ...
	W. S. Hastings & Son, Atglen, Pa.	
1551	Atglen Soluble Bone and Potash, ...	Emanuel Waltman, Mechanics Grove, ...
	S. M. Hess & Bro., Philadelphia, Pa.	
617	†Emperor Phosphate, ...	Joseph Grabill, Thompsontown, ...
408		Augustus Driebelbis, Virginsville, ...
1230		Edwin Frace, Easton, ...
717	Peerless Phosphate, ...	C. L. Brown, Nicholson, ...
	Hubbard Fertilizer Co., Baltimore, Md.	
869	Hubbard's Soluble Bone and Potash, ...	J. L. Reece & Co., Millville, ...
	Lancaster Chemical Co., Lancaster, Pa.	
901	Economist Fertilizer, ...	E. W. Rupp, Shiremanstown, ...
630	No. 10 Economist Fertilizer, ...	C. J. Bushey, Dillsburg, ...
629	No. 13 Special Potash Manure, ...	C. J. Bushey, Dillsburg, ...

†Composite sample.

FERTILIZERS—Continued.

Moisture in 100 pounds.	Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds. (Water Soluble.)				Computed commercial value of 2,000 pounds at Department rating. (See p. 19.)	Selling price of 2,000 pounds at point of selection.	Sample number.
	Soluble in water.	Reverted.	Insoluble.	Total.		Available.		Present as muriate.	Present as sulphate.	Total.				
				Found.	Guaranteed.	Found.	Guaranteed.			Found.	Guaranteed.			
11.03	7.22	4.11	.89	12.22	.....	*11.33	12.00	5.74	.....	5.74	5.00	19.59	17.50	660
7.91	1.48	8.24	1.30	11.02	.....	*9.72	10.00	2.46	.....	2.46	2.00	14.53	15.00	545
													14.00	433
													16.00	758
10.25	5.30	3.81	2.35	11.46	9.00	9.11	8.00	4.66	.....	*4.66	5.00	17.18	20.00	1237
9.80	4.05	5.25	2.33	11.63	.....	9.30	9.00	5.64	.....	5.64	4.00	18.20	15.00	1155
8.79	4.41	4.68	2.65	11.74	.....	9.09	9.00	5.51	.....	5.51	4.00	18.06	16.00	1156
10.64	7.27	5.31	.20	*12.78	13.00	12.58	12.00	4.59	.....	*4.59	5.00	19.11	18.00	396
8.78	2.62	5.68	1.11	9.41	9.00	8.30	8.00	3.07	.....	3.07	3.00	14.19	18.00	293
9.24	6.35	3.25	1.07	*10.67	11.00	*9.60	10.00	1.41	.....	*1.41	2.00	13.89	13.50	1376
11.05	4.90	4.81	2.44	12.15	9.00	9.71	8.00	1.94	.....	*1.94	2.00	14.85	14.00	651
13.00	5.23	5.50	2.51	13.24	13.00	*10.73	12.00	2.71	.....	*2.71	5.00	16.44	19.00	674
10.14	4.77	5.12	3.01	12.90	11.00	*9.89	10.00	5.50	.....	*5.50	8.00	18.80	18.50	522
8.20	2.77	5.59	1.59	*9.95	10.00	*8.36	9.00	3.00	.....	3.00	3.00	14.38	20.00	298
8.15	1.13	6.82	3.89	11.84	.....	*7.95	10.00	2.09	.....	2.09	2.00	13.82	14.00	1602
11.28	5.74	4.67	.71	11.12	.....	10.41	10.00	2.37	.....	2.37	2.00	15.24	14.50	956
													14.00	195
													14.50	1296
10.15	4.90	2.45	.41	*7.76	8.50	7.35	7.00	3.35	.....	3.35	3.00	13.84	21.00	1284
10.15	4.92	2.48	.47	*7.87	10.00	*7.40	9.00	3.62	.....	*3.62	4.00	14.16	19.00	1285
8.64	.99	8.24	3.57	12.80	12.00	*9.23	10.00	3.14	.....	3.14	2.00	15.68	14.50	509
10.82	6.17	3.83	.56	*10.56	11.50	10.00	10.00	2.06	.....	2.06	2.00	14.64	14.00	451
12.00	5.16	4.81	2.56	12.53	11.00	*9.97	10.00	5.23	.....	5.23	5.00	18.50	15.50	57
11.27	4.33	5.33	1.25	10.61	.....	*9.36	10.00	1.91	.....	*1.91	2.00	14.06	13.00	1551
9.05	5.84	4.16	1.09	*11.09	12.00	10.00	10.00	1.12	.....	1.12	1.00	13.83	.....	617
													15.00	408
11.10	6.91	3.59	1.31	*11.81	13.00	*10.50	12.00	4.98	.....	*4.98	5.00	18.39	13.00	1230
													18.50	717
10.55	4.72	5.33	1.35	11.40	11.00	10.05	10.00	2.91	.....	2.91	2.00	15.66	14.00	869
10.55	1.20	8.42	1.40	11.12	11.00	*9.72	10.00	1.42	.....	*1.42	2.00	13.47	16.00	901
11.11	1.81	6.17	3.85	11.83	11.00	*7.98	10.00	3.37	.....	3.37	2.00	15.19	15.00	630
8.85	1.12	7.18	3.15	11.45	11.00	*8.30	10.00	3.83	.....	*3.83	5.00	15.57	17.00	629

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.
	D. Levan, Lebanon, Pa.	
606	Soluble Bone and Potash,	Jno. E. Stover, Thompsontown,
	Lister's Agri. Chemical Works, Newark, N. J.	
597	Lister's Animal Bone and Potash,	G .W. Martin & Co., Saltsburg,
	D. B. Martin & Co., Philadelphia, Pa.	
203	†Martin's Potash and Soluble Bone No. 1,	Levi Long, Trent,
352		S. H. Purdy, Murdocksville,
	Miller Fertilizer Co., Baltimore, Md.	
857	Buyer's Mixture,	H. B. Low & Son, Orangeville,
	Nassau Fertilizer Co., New York.	
357	Grass and Grain Fertilizer,	W. W. Ingles, New Sheffield,
707	Potash and Phosphate,	W. W. Wilmarth & Sons, Harford,
	North Western Fertilizing Co., Chicago, Ill.	
845	North Western X. X. X. Alkaline Bone,	Smith Supplee Co., Ltd., Bloomsburg,
	Patapsco Guano Co., Baltimore, Md.	
671	High Grade Bone and Potash,	J. N. Hersh, New Oxford,
190	Patapsco Phospho Potash,	J. O. S. Burkholder, Hummelstown,
	The Pennsylvania Fertilizer Co., Buffalo, N. Y.	
345	Standard Phosphate,	J. P. McConnell, New Sheffield,
	Piedmont-Mt. Airy Guano Co., Baltimore, Md.	
208	Piedmont Soluble Bone and Potash,	C. H. Smucker, Fricdens,
	Pittsburg Provision and Packing Co., Pittsburg, Pa.	
421	Phosphate and Potash,	Peter Heffley, Somerset,
	The Pollock Fertilizer Co., Baltimore, Md.	
317	Pollock's Dissolved Bone and Potash,	Wm. H. Shaffer, Somerset,
	Ramsburg Fertilizer Co., Frederick, Md.	
657	Alkaline Phosphate,	Nelson Study, Littlestown,
	Rasin-Monumental Co., Baltimore, Md.	
173	Rasin's Bone and Potash Fertilizer,	Elias S. Brubacher, Richland,
172	Rasin's Special Bone and Potash,	Elias S. Brubacher, Richland,
36	Rasin's Special Formula for Corn and Buckwheat.	Wilson & Mendenhall, Toughkenamon,
	Reading Bone Fertilizer Co., Reading, Pa.	
43	†Soluble Bone and Potash,	Chester Co. Asso of Farmers, Kelton,
729		A. M. Gehman, Macungie,
	Schaal-Sheldon Fertilizer Co., Erie, Pa.	
1089	Dissolved Bone and Extra Potash,	G. R. Leslie, Arnold,
	Scott Fertilizer Co., Elkton, Md.	
731	Fritch's Special for Grain and Grass,	L. W. Fritch, Macungie,
	Southern Fertilizing Co., York, Pa.	
1191	Farmer's Mixture,	Earnest & Bupp, York,
	I. P. Thomas & Sons Co., Philadelphia, Pa.	
62	Alkaline Bone,	Jerry Koch, Middlecreek,
395	†Special Alkaline Bone,	Wm. Merkel, Hamburg,
185		John S. Engle, Hummelstown,
534		W. G. Ford, Mooresburg,

†Composite sample.

FERTILIZERS—Continued.

Moisture in 100 pounds.	Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds. (Water Soluble.)				Computed commercial value of 2,000 pounds at Department rating. (See p. 19.)	Selling price of 2,000 pounds at point of selection.	Sample number.
	Soluble in water.	Reverted.	Insoluble.	Total.		Available.		Present as muriate.	Present as sulphate.	Total.				
				Found.	Guaranteed.	Found.	Guaranteed.			Found.	Guaranteed.			
6.53	5.10	3.89	.87	*9.86	11.00	*8.99	10.00	2.79	.....	2.79	2.00	14.66	15.25	606
11.14	5.00	4.18	1.38	10.56	.....	9.18	.....	4.68	.....	4.68	.....	16.92	21.00	597
10.50	9.28	3.06	1.07	13.41	.....	12.34	.....	3.43	.....	3.43	.....	18.31	16.00	203
													.....	352
8.17	4.59	5.05	1.85	*11.49	11.50	*9.64	10.00	4.50	.....	*4.50	5.00	17.17	16.25	857
12.13	4.84	5.37	1.32	11.53	11.00	10.21	10.00	2.37	.....	2.37	2.00	15.24	15.50	357
11.93	7.60	2.42	1.20	11.22	11.00	10.02	10.00	4.81	.....	*4.81	5.00	17.84	16.75	707
10.25	8.17	2.03	1.62	11.82	11.00	10.20	10.00	5.23	.....	5.23	5.00	18.66	15.00	845
9.65	7.88	2.87	.69	*11.44	12.00	*10.75	11.00	5.22	.....	5.22	5.00	18.64	19.50	671
7.57	2.33	3.94	.59	*6.86	7.00	6.27	6.00	3.12	.....	3.12	3.00	12.56	13.00	190
9.15	3.47	5.17	1.67	*10.31	11.00	*8.64	10.00	6.93	.....	6.93	6.00	18.74	19.00	345
9.39	5.48	2.89	.07	8.44	.....	8.37	8.00	1.52	.....	*1.52	2.00	12.67	13.00	208
8.69	2.47	6.81	1.99	11.27	10.00	9.28	9.00	2.07	.....	2.07	2.00	14.17	17.00	421
12.04	6.81	4.12	.82	11.75	11.00	10.93	10.00	2.41	1.39	*3.80	4.00	17.52	16.00	317
12.55	3.39	9.10	1.15	13.64	12.00	12.49	10.00	2.31	.....	2.31	2.00	16.58	14.00	657
10.65	6.07	3.94	2.42	12.43	12.00	10.01	10.00	1.99	.....	*1.99	2.00	15.27	14.56	173
9.86	5.09	4.21	2.54	11.84	11.00	*9.30	10.00	5.18	.....	5.18	5.00	17.94	16.56	172
10.64	3.85	4.07	1.38	9.20	7.00	7.92	6.00	3.18	.....	3.18	3.00	14.32	14.50	36
9.68	3.46	7.53	2.63	13.62	12.00	10.99	10.00	2.27	.....	2.27	2.00	15.97	12.00	43
													.....	729
11.10	4.59	5.59	1.78	11.96	11.00	10.18	10.00	5.16	.....	5.16	4.00	18.19	18.00	1089
13.19	10.31	2.56	.64	13.51	.....	12.87	.....	5.62	.....	5.62	.....	20.84	19.50	731
11.54	7.17	3.32	.40	*10.89	11.00	10.49	10.00	2.25	.....	2.25	2.00	15.26	15.00	1191
12.71	4.64	6.03	.87	11.54	11.00	10.67	10.00	2.35	.....	2.35	2.00	15.38	13.00	62
9.14	1.15	8.48	1.42	11.05	11.00	*9.63	10.00	4.04	.....	4.04	4.00	16.12	16.50	395
													16.00	185
													16.00	534

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.
61	Special Corn Fertilizer,	Jerry Koch, Middlecreek,
63	Thomas' Square Deal Fertilizer,	Jerry Koch, Middlecreek,
	F. W. Tunnell & Co., Philadelphia, Pa.	
721	Gehman's Special,	W. M. Gehman, Macungie,
	Tuscarora Fertilizer Co., Baltimore, Md.	
734	Tuscarora Alkaline,	J. Singmaster & Co., Macungie,
	Virginia-Carolina Chemical Co., Richmond, Va.	
417	Peerless Bone and Potash,	Joseph Rhoades, Somerset,
	W. E. Whann & Co., Wm. Penn, Pa.	
258	Whann's Chester Valley Soluble Bone and Potash.	Seligman & Co., Tamaqua,
	Robt. A. Wooldridge Co., Baltimore, Md.	
1268	German Potash Mixture,	P. J. Havice, Milroy,
626	Wooldridge's Ideal Grain and Grass Producer.	J. W. Glatfelter, Rossville,
41	Liberty Bell Potash Mixture,	Franklin G. Evans, Kelton,
	Wooldridge Fertilizer Co., Baltimore, Md.	
866	Virginia Bell Potash Mixture,	J. L. Reece & Co., Millville,
	York Chemical Co., York, Pa.	
649	†Dempwolf's Black Cross,	D. M. Frey & Shaffer, Hanover,
755		E. M. Harshleyer, Mattawana,
1202	†Dempwolf's Red Cross,	Gochenour & Cook, Dillsburg,
1212		George Rahauser, Gilford Springs,
55	Dempwolf's Wheat Special,	Saml. Shirey, Beaver Spring,

†Composite sample.

FERTILIZERS—Continued.

Moisture in 100 pounds.	Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds. (Water Soluble.)				Computed commercial value of 2,000 pounds at Department rating. (See p. 19.)	Selling price of 2,000 pounds at point of selection.	Sample number.
	Soluble in water.	Reverted.	Insoluble.	Total.		Available.		Present as muriate.	Present as sulphate.	Total.				
				Found.	Guaranteed.	Found.	Guaranteed.			Found.	Guaranteed.			
11.51	2.06	7.39	1.71	11.16	11.00	*9.45	10.00	2.40	5.02	7.42	6.50	20.52	20.00	61
8.29	2.32	6.07	.83	*9.23	10.00	*8.39	9.00	1.20	2.16	3.36	3.00	14.80	16.50	63
13.17	6.45	5.97	.94	13.36	.....	12.42	.....	6.07	.....	6.07	.....	20.62	20.00	721
8.49	8.06	2.12	1.12	*11.30	12.00	10.18	10.00	5.10	.. ...	5.10	5.00	18.32	17.00	734
13.30	4.46	4.65	4.23	13.34	9.00	9.11	8.00	1.95	.....	*1.95	2.00	15.02	15.00	417
12.05	5.92	4.10	.79	10.81	.....	10.02	.....	2.46	.....	2.46	.....	15.09	18.00	258
9.33	6.88	3.00	.64	*10.52	11.00	*9.88	10.00	2.71	.....	2.71	2.00	15.32	.....	1268
8.25	6.50	3.37	.94	*10.81	11.00	*9.87	10.00	4.54	.....	4.54	4.00	17.26	16.00	626
11.80	8.76	3.29	.81	*12.86	13.00	12.05	12.00	2.53	.82	3.35	3.00	17.98	17.00	41
12.34	7.21	4.85	2.01	14.07	13.00	12.06	12.00	2.93	.....	*2.93	3.00	17.67	16.50	866
6.76	5.05	3.69	1.20	*9.94	10.50	*8.74	10.00	1.67	.....	*1.67	2.00	13.42	15.00	649
													16.00	755
10.10	5.36	3.83	1.28	*10.47	10.50	*9.19	10.00	4.32	.....	*4.32	5.00	16.52	17.75	1202
													17.00	1212
10.55	6.25	2.98	1.33	10.56	10.50	*9.23	10.00	2.03	.....	2.03	2.00	14.37	16.00	55

*Constituent falls below guaranty.

DISSOLVED BONE

Furnishing Phosphoric

Sample number.	From Whom Sample Was Taken	Manufacturer and Brand.
	D. B. Martin Co., Philadelphia, Pa.	
34	Martin's Crop Producer, ...	Wilson & Mendenhall, Toughkenamon, ...
666	†Pure Dissolved Bone, ...	A. P. Lippy, Littlestown, ...
1330		J. H. Thompson, Harmarville, ...
	F. Mehring, Bruceville, Md.	
662	Dissolved Raw Bone, ...	John N. Slifer, Littlestown, ...
	Pittsburg Provision and Packing Co., Pittsburg, Pa.	
420	†Guano Fertilizer, ...	Peter Heffley, Somerset, ...
1083		Benj. Way, Freeport, ...
	M. N. Risser, Elizabethtown, Pa.	
364	Risser's Crop Grower, ...	M. N. Risser, Elizabethtown, ...
	F. W. Tunnell & Co., Philadelphia, Pa.	
16	†Raw and Acidulated Bone, ...	Brinton & Worth, West Chester, ...
1225		Jones & Paxon, Hatboro, ...

†Composite sample.

FERTILIZERS.

Acid and Nitrogen.

Moisture in 100 pounds.	Phosphoric Acid in 100 Pounds.							Nitrogen in 100 Pounds.		Computed commercial value of 2,000 pounds at Department rating. (See p. 19.)	Selling price of 2,000 pounds at point of selection.	Sample number.
	Soluble in water.	Reverted.	Insoluble.	Total.		Available.						
				Found.	Guaranteed.	Found.	Guaranteed.	Found.	Guaranteed.			
11.33	5.94	4.43	1.57	11.94	.....	10.37	10.00	*.96	1.03	20.58	17.50	34
13.75	6.81	3.87	3.87	14.55	.....	10.68	.....	1.77	.....	26.04	25.00	666
											26.00	1330
7.34	7.19	8.12	2.68	17.99	15.00	15.31	14.00	1.68	1.65	31.45	26.00	662
3.91	1.48	7.36	2.17	11.01	11.00	*8.84	9.00	1.67	1.65	22.10	17.00	420
											20.00	1083
10.58	6.07	4.21	1.70	11.98	.....	10.28	10.00	1.19	1.03	21.78	14.00	364
4.30	5.28	7.83	7.52	20.63	20.00	13.11	10.00	*1.41	1.65	28.53	27.00	16
											28.00	1225

*Constituent falls below guaranty.

GROUND BONE

Furnishing Phosphoric

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.
	American Agricultural Chemical Co., New York.	
75	Fine Ground Bone,	The Beaver Hardware Co., Beaver,
113	Pure Ground Bone,	Union Coal and Supply Co., Union City,
	Armour Fertilizer Works, Baltimore, Md.	
107	Bone Meal,	Acme Milling Co., Corry,
106	Raw Bone Meal,	Acme Milling Co., Corry,
	Baugh & Sons Co., Philadelphia, Pa.	
11	Baugh's Raw Bone Meal—Warranted Pure,	Pennock & Brosius, Avondale,
	The Berg Co., Philadelphia, Pa.	
144	†Berg's Raw Bone Fine,	James Bradley, Lamdale,
970		A. B. Groff, New Holland,
	Bowker Fertilizer Co., Boston, Mass.	
88	Fresh Ground Bone,	W. C. Beckert, Allegheny, Pa.,
	Buffalo Fertilizer Co., Buffalo, N. Y.	
1008	Bone Meal,	H. D. Dawson, Smith's Ferry,
	Cambria Fertilizer Co., Johnstown, Pa.	
1514	Pure Fine Ground Bone Dust,	H. H. Reese, Wilmore,
	Henry Cope & Co., Lincoln University, Pa.	
47	Pure Ground Bone,	Wm. K. McClurg, Oxford,
	Josiah Cope Co., Baltimore, Md.	
955	Pure Ground Raw Bone,	Jones Evanson, Christiana,
	Wallace Dungan, Doylestown, Pa.	
810	Bone Flour,	Wallace Dungan, Doylestown,
	Griffith & Boyd, Baltimore, Md.	
81	Soft Ground Bone,*	Geo. H. Hegner, Sewickley,
	D. B. Martin Co., Philadelphia, Pa.	
1340	Pure Ground Bone,	A. E. Walker, Burgettstown,
	The Miller Fertilizer Co., Baltimore, Md.	
794	Ground Bone,	Miller T. Harkins, Hickory Hill,
	Pittsburg Provision and Packing Co., Pittsburg, Pa.	
86	Pure Bone Flour,	W. C. Beckert, Allegheny,
84	†Pure Raw Bone Meal,	W. C. Beckert, Allegheny,
96		F. Baxmyer & Co., Pittsburg,
	Pollock Fertilizer Co., Baltimore, Md.	
19	Pollock's Soft Ground Bone,	D. C. Windle, West Chester,
	Schaal-Sheldon Fertilizer Co., Erie, Pa.	
90	Fine Ground Bone,	I. W. Scott & Co., Pittsburg,
	M. L. Shoemaker & Co., Philadelphia, Pa.	
221	Pure Raw Bone Meal,	Aaron Spittler, Pine Grove,

*Considerable added sulphates present.
†Composite sample.

FERTILIZERS.

Acid and Nitrogen.

Moisture in 100 pounds.	Mechanical Analysis.		Chemical Analysis.				Computed commercial value of 2,000 pounds at Department rating. (See p. 19.)	Selling price of 2,000 pounds at point of selection.	Sample number.
	Diameter less than 1-50 inch "fine."	Diameter greater than 1-50 inch, "coarse."	Phosphoric Acid.		Nitrogen.				
			Found.	Guaranteed.	Found.	Guaranteed.			
3.68	85	15	23.09	22.80	*2.09	2.47	26.84	30.00	75
6.13	76	24	20.80	20.60	3.53	3.30	29.95	29.00	113
4.72	72	28	25.45	24.00	2.85	2.47	30.55	28.00	107
7.08	81	19	24.02	22.00	4.03	3.71	34.16	32.00	106
6.84	85	15	21.54	21.50	3.89	3.71	32.08	28.00	11
5.53	51	49	21.72	20.00	3.66	3.00	29.83	29.00	144
								27.00	970
3.05	77	23	*20.79	22.30	2.52	2.47	26.34	27.00	88
6.70	84	16	22.56	22.00	*1.94	2.88	25.88	29.00	1008
6.07	61	39	23.04	20.00	3.65	3.00	31.18	28.00	1514
4.87	70	30	20.97	20.00	3.18	2.88	28.59	28.00	47
6.09	75	25	22.34	22.00	3.77	3.71	31.66	27.00	955
6.25	74	26	20.84	20.61	4.63	3.71	33.73	29.00	810
4.10	75	25	11.48	11.00	3.14	2.47	22.10	32.00	81
3.25	77	23	24.47	23.00	2.67	1.65	29.38	28.00	1340
4.12	70	30	17.10	13.70	*2.32	2.47	22.84	26.00	794
2.48	100	.....	18.83	.....	3.74	.....	30.27	50.00	86
2.84	84	16	*19.82	26.00	4.03	3.71	31.35	29.00	84
								28.00	96
4.05	65	35	24.96	14.00	2.57	2.47	28.87	28.00	19
3.04	79	21	*22.14	22.90	*2.41	2.47	27.00	31.00	90
2.05	86	14	24.33	20.61	4.74	2.47	37.11	29.00	221

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.
	Swift & Co., Chicago, Ill.	
562	Swift's Pure Bone Meal, ...	D. J. Davis, Ebensburg, ...
	Emil Wahl, Philadelphia, Pa.	
13	†Emil Wahl's Warranted Pure Philadelphia Button Bone Dust.	Pennock & Brosius, Avondale, ...
132		Hillis & Taggert, Norristown, ...

FERTILIZERS—Continued.

Moisture in 100 pounds.	Mechanical Analysis.		Chemical Analysis.				Computed commercial value of 2,000 pounds at Department rating. (See p. 19.)	Selling price of 2,000 pounds at point of selection.	Sample number.
	Diameter less than 1-50 inch "fine."	Diameter greater than 1-50 inch, "coarse."	Phosphoric Acid.		Nitrogen.				
			Found.	Guaranteed.	Found.	Guaranteed.			
4.39	70	30	26.07	.....	2.19	.....	28.63	25.00	562
8.89	70	30	24.28	24.16	*3.50	3.58	31.92	28.00 30.00	13 132

*Constituent falls below guaranty.

ACIDULATED

Furnishing

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.
	American Agricultural Chemical Co., New York.	
161	Canton Chemical Baker's Dissolved Bone Phosphate.	Josiah Specht, Kantner,
167	Clarke's Cove Atlas Bone Phosphate	Jno. H. Noy, Coleman,
358	Crocker's Dissolved Bone Phosphate,	S. E. Hood, Hookstown,
599	Maryland Dis. S. C. Phosphate 14 Per Cent.	Smith & McKelvey, Blairsville,
985	Milsom's Acid Phosphate,	Steveson & McDonald, Hookstown,
389	Read's Acid Phosphate,	William R. Miller, Sinking Spring,
146	Packer's Union Acidulated Bone,	N. A. Blough, Holsopple,
573	Quinnipiac Sol. Dis. Bone 14 Per Cent.,	Jas. L. Culp, Indiana,
326	Tygert-Allen Star Dissolved Bone Phosphate.	A. F. Swank, Holsopple,
149	Wheeler's Electrical Dissolved Bone,	John N. Kaufman, Davidsville,
	Bradley Branch, New York.	
783	Soluble Dissolved Bone,	R. L. Stebbins, Mosiertown,
	Canton Chemical Branch, New York.	
241	Baker's Dissolved S. C. Rock,	Lewis Heffner, Pine Grove,
	Detrick Branch, New York.	
33	Detrick's Dissolved S. C. Bone,	Wilson & Mendenhall, Toughkenamon,
	Milsom Branch, New York.	
788	Dissolved Bone Phosphate,	D. B. Moses, Spring Borough,
	Moro-Phillips Branch, New York.	
478	Soluble Bone Phosphate,	James W. Dreher, Orwigsburg,
	Reese Branch, New York.	
1301	Reese's Dissolved Phosphate of Lime,	Wm. C. Ball, Media,
	Zell Guano Branch, New York.	
115	Dissolved Bone Phosphate,	Union Coal and Supply Co., Union City,
	Armour Fertilizer Works, Baltimore, Md.	
413	Armour's Star Phosphate,	Beevits & Sons, Somerset,
102	Cereal Phosphate,	Acme Milling Co., Corry,
	Baugh & Sons Co., Philadelphia, Pa.	
3	Baugh's High Grade Acid Phosphate,	E. A. & J. L. Pennock, Chatham,
	Bowker Fertilizer Co., Boston, Mass.	
768	Bowker's Soluble Bone,	Robert Smith, Centre Hall,
	Buffalo Fertilizer Co., Buffalo, New York.	
1006	Soluble Bone,	H. D. Dawson, Smith's Ferry,
	Josiah Cope & Co., Baltimore, Md.	
436	†Acidulated Phosphate,	A. T. Holman, Millerstown,
26		Harry Wilson, Frazer,
850		W. F. Slagle, Bloomsburg,
	Eureka Fertilizer Co., Perryville, Md.	
1198	P. and P. Superphosphate,	Jacob Rensel, Mount Wolf,
	W. S. Farmer & Co., Baltimore, Md.	
450	Dissolved S. C. Bone,	J. L. Ritter & Son, Newport,

†Composite sample.

ROCK PHOSPHATES.

Phosphoric Acid.

Moisture in 100 pounds.	Phosphoric Acid in 100 Pounds.							Computed commercial value of 2,000 pounds at Department rating. (See p. 19.)	Selling price of 2,000 pounds at point of selection.	Sample number.
	Soluble in water.	Reverted.	Insoluble.	Total.		Available.				
				Found.	Guaranteed.	Found.	Guaranteed.			
10.82	6.78	7.23	1.13	15.14	15.00	14.01	14.00	14.53	16.00	161
10.25	10.38	3.65	1.25	15.28	15.00	14.03	14.00	15.02	14.00	167
9.33	11.85	3.43	.56	15.84	15.00	15.28	14.00	15.85	.....	358
13.43	5.58	8.37	1.25	15.20	15.00	*13.95	14.00	14.37	14.00	599
9.50	10.90	4.19	.82	15.91	15.00	15.09	14.00	15.67	14.00	985
6.24	7.65	6.77	.31	*14.73	15.00	14.42	14.00	14.64	13.00	389
11.60	10.53	3.73	.79	15.05	15.00	14.26	14.00	15.02	13.50	146
13.67	14.11	3.54	1.34	15.99	15.00	14.65	14.00	15.57	15.00	573
9.67	10.20	4.14	1.41	15.75	15.00	14.34	14.00	15.26	.....	326
9.71	10.48	3.82	1.40	15.70	15.00	14.30	14.00	15.26	.....	149
11.26	8.03	5.48	2.53	16.04	15.00	*13.51	14.00	14.83	16.00	783
10.64	9.94	4.79	.64	15.37	15.00	14.73	14.00	15.24	14.00	241
10.21	8.77	5.61	.55	*14.93	15.00	14.38	14.00	14.83	12.50	33
11.69	6.76	5.06	1.72	13.54	13.00	*11.82	12.00	13.15	14.25	788
8.70	9.82	4.63	.56	*14.91	15.00	14.35	14.00	14.91	14.00	478
9.87	9.18	4.75	.51	*14.44	15.00	*13.93	14.00	14.53	13.00	130
9.18	11.26	3.79	.94	15.99	15.00	15.05	14.00	15 74	15.00	115
3.30	13.26	2.60	.77	16.63	16.00	15.86	14.00	16.50	13.00	413
5.21	7.31	4.81	1.19	13.31	12.00	12.12	10.00	13.22	15.00	102
11.28	11.76	3.22	.85	15.83	.....	14.98	14.00	15.72	12.50	3
10.70	12.88	2.37	1.15	16.40	15.00	15.25	14.00	16.15	.....	768
13.46	6.12	5.99	3.14	15.25	15.00	*12.11	14.00	13.78	17.00	1006
9.70	10.30	4.03	.69	15 02	.....	14.33	14.00	14.98	13.50 12.00 13.00	436 26 850
10.18	7.55	6.18	2.59	16.32	16.00	*13.73	14.00	14.91	12.50	1198
9.98	10.25	3.96	.92	*15.13	16.00	14.21	14.00	15.01	13.50	450

*Constituent falls below guaranty.

Sample number.	Manufacture and Brand.	From Whom Sample Was Taken.
	S. M. Hess & Bro., Philadelphia, Pa.	
618	Soluble Bone Phosphate,	Joseph Graybill, Thompsontown,
310	Soluble Bone Phosphate,	T. W. Donaldson, Clintonville,
	Hubbard Fertilizer Co., Baltimore, Md.	
870	Hubbard's H. G. Soluble Tennessee Phosphate.	John L. Reece & Co., Millville,
	E. Mehring, Bruceville, Md.	
664	Acid Phosphate,	John N. Slifer, Littlestown,
	Michigan Carbon Works, Detroit, Mich.	
117	Red Line Phosphate,	Davis & Hyde, Spartansburg,
	Miller Fertilizer Co., Baltimore, Md.	
795	S. C. Rock,	Miller T. Harkins, Oxford,
	Ramsburg Fertilizer Co., Frederiek, Md.	
659	Dissolved Bone Superphosphate,	Nelson Study, Littlestown,
	Rasin-Monumental Co., Baltimore, Md.	
177	Rasin's Sea Wall Special,	Elias S. Brubaker, Richland,
	Reading Bone Fertilizer Co., Reading, Pa.	
589	Soluble Dissolved Bone,	H. F. Beatty, Saltsburg,
	M. L. Shoemaker & Co., Philadelphia, Pa.	
220	Dissolved S. C. Rock,	Aaron Spittler, Pine Grove,
	I. P. Thomas & Sons Co., Philadelphia, Pa.	
1053	S. C. Phosphate,	Compton & Lilley, Troy,
	F. W. Tunnell & Co., Philadelphia, Pa.	
725	S. C. Rock Phosphate,	W. M. Gehman, Macungie
	The Wooldridge Orchilla Co., Baltimore, Md.	
1174	Orchilla Guano,	Geo. B. Murphy, Keys,

†Composite sample.

PHOSPHATES—Continued.

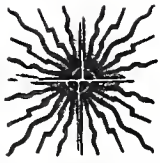
Moisture in 100 pounds.	Phosphoric Acid in 100 Pounds.							Computed commercial value of 2,000 pounds at Department rating. (See p. 19.)	Selling price of 2,000 pounds at point of selection.	Sample number.
				Total.		Available.				
	Soluble in water.	Reverted.	Insoluble.	Found.	Guaranteed.	Found.	Guaranteed.			
9.75	10.43	3.85	1.40	15.68	.....	14.28	.....	15.26	.....	618
10.90	8.58	5.48	1.77	15.83	15.00	14.06	14.00	15.02	18.00	310
11.55	9.94	2.93	1.29	14.16	.....	*12.87	14.00	14.12	13.00	870
11.73	10.45	4.88	3.31	18.64	16.00	15.33	15.00	16.70	13.00	664
13.30	11.56	3.37	1.49	16.42	15.00	14.93	14.00	15.86	13.50	117
7.20	7.90	6.59	.79	15.28	.....	14.49	14.00	14.88	11.50	795
7.33	10.68	4.71	1.13	16.52	16.00	15.39	14.00	15.97	12 00	659
11.98	11.32	3.14	1.66	16.12	11.00	14.46	10.00	15.56	12.00	177
9.03	1.62	7.22	5.26	14.10	14.00	*8.84	12.00	11.67	15.00	589
12.42	10.14	4.41	.96	15.51	14.00	14.55	12.00	15.25	14.00	220
13.33	12.24	2.23	.73	15.20	15.00	14.47	14.00	15.37	14.00	1053
.96	.71	8.71	1.20	10.62	.....	9.42	.....	10.48	15.00	725
7.35	.03	5.03	13.85	*18.91	21.00	*5.06	8.00	11.84	16.40	1174

*Constituent falls below guaranty.

Sample number.	Manufacturer and Brand.	From Whom Sample Was Taken.	Moisture in 100 pounds.
83	**Griffith & Boyd, Baltimore, Md.** Nitro Crop Feeder, ...	George H. Hegner, Sewickley, ...	3.95

†Composite sample.

FERTILIZERS.

Phosphoric Acid in 100 Pounds.							Potash in 100 Pounds. (Water Soluble.)				Nitrogen				
			Total.		Available.				Total.						
Soluble in water.	Reverted.	Insoluble.	Found.	Guaranteed.	Found.	Guaranteed.	Present as muriate.	Present as sulphate.	Found.	Guaranteed.	Found.	Guaranteed.	Computed commercial value of 2,000 pounds at Department rating	Selling price of 2,000 pounds at the point of selection.	Sample number.
.....	.....	.....	.73	.....	.....	.....	4.40	.....	4.40	2.50	*6.72	7.41	41.85	49.00	83

*Constituent falls below guaranty.